DVP-NS900V

RMT-D139P/D140A/D140E/D140P

SERVICE MANUAL

Self Diagnosis Supported model

US Model
Canadian Model
AEP Model
UK Model
Russian Model
Mexico Model
Hong Kong Model
Korea Model

Photo: Titanium gray type

SPECIFICATIONS

System

Laser	Semiconductor laser
Signal format system	NTSC/PAL

Audio characteristics

Frequency response	DVD (PCM 96 kHz): 2 Hz to 44 kHz (–2 dB ± 1 dB at 44 kHz) SACD: 2 Hz to 100 kHz (–3 dB ± 1 dB at 50 kHz) CD: 2 Hz to 20 kHz (±0.5 dB)
Signal-to-noise ratio (S/N ratio)	115 dB (DVD VIDEO) (AUDIO OUT L/R 1/2 jacks only)
Harmonic distortion	0.002 %
Dynamic range	DVD VIDEO/SACD: 103 dB CD: 99 dB
Wow and flutter	Less than detected value (±0.001% W PEAK)

Outputs

Jack name	Jack type	Output level	Load impedance
AUDIO OUT L/R	Phono jack	2 Vrms (at 50 kilohms)	Over 10 kilohms
DIGITAL OUT (OPTICAL)	Optical output jack	–18 dBm	Wave length: 660 nm
DIGITAL OUT (COAXIAL)	Phono jack	0.5 Vp-p	75 ohms terminated
5.1CH OUTPUT	Phono jack	2 Vrms (50 kilohms)	Over 10 kilohms
COMPONENT VIDEO OUT(Y, P_B/C_B, P_R/C_R)	Phono jack	Y: 1.0 Vp-p P_B/C_B, P_R/C_R: 0.7 Vp-p	75 ohms, sync negative 75 ohms
VIDEO OUT	Phono jack	1.0 Vp-p	75 ohms, sync negative
S VIDEO OUT	4-pin mini DIN	Y: 1.0 Vp-p C: 0.3 Vp-p (PAL) 0.286 Vp-p (NTSC)	75 ohms, sync negative 75 ohms terminated
PHONES	Phone jack	12mW	32 ohms

General

Power requirements	120 V AC, 60 Hz (US, CND, MX) 220 to 240 V AC, 50/60 Hz (AEP, UK, RUS) 220 V AC, 60 Hz (HK, KR) See page 2 for further information.
Power consumption	25 W (AEP, UK, RUS) 26 W (EXCEPT AEP, UK, RUS)
Dimensions (approx.)	430 × 113 × 343 mm (w/h/d) incl. projecting parts
Mass (approx.)	5.3 kg
Operating temperature	5 °C to 35 °C
Operating humidity	25 % to 80 %

Supplied accessories

Check that you have the following items:
- Audio/video cord (pinplug × 3 ←→ pinplug × 3) (1)
- S VIDEO cord (1)
- Remote commander (remote) RMT-D139P (1) (AEP1, AEP3, UK1, RUS)
- Remote commander (remote) RMT-D140A (1) (US, CND, MX, KR)
- Remote commander (remote) RMT-D140E (1) (HK)
- Remote commander (remote) RMT-D140P (1) (AEP2, UK2)
- Size R6 (AA) batteries (2)

Specifications and design are subject to change without notice.

- Abbreviation
  CND : Canadian
  HK : Hong Kong
  KR : Korea
  MX : Mexican
  RUS : Russian

DVD VIDEO SUPER AUDIO CD COMPACT disc DIGITAL VIDEO

SACD/DVD PLAYER

SONY®

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the line cord for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
6. Check the B+ voltage to see it is at the values specified.
7. Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

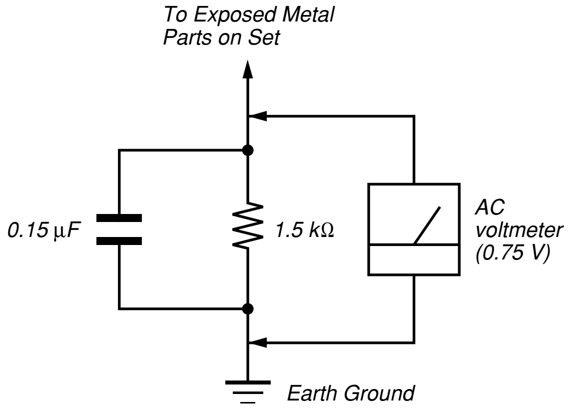

Fig. A. Using an AC voltmeter to check AC leakage.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

WARNING!!

WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION, BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 25 cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.

CAUTION:

The use of optical instrument with this product will increase eye hazard.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

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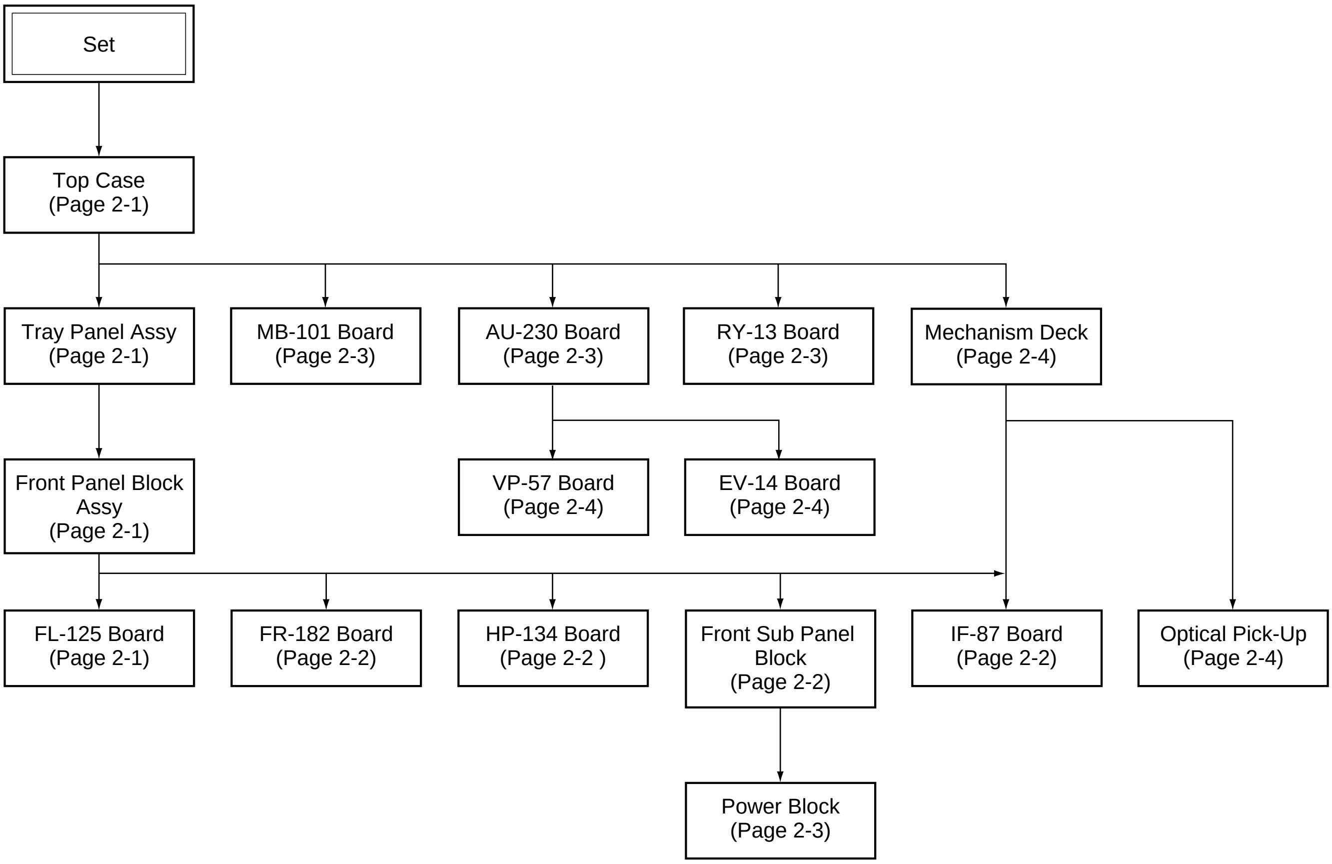
- Abbreviation

  CND : Canadian
  HK : Hong Kong
  KR : Korea
  MX : Mexican
  RUS : Russian

SERVICE NOTE

1. DISASSEMBLY

- This set can be disassembled in the order shown below.



2. DISC REMOVAL PROCEDURE (at POWER OFF)

1) Insert a tapering driver into the aperture of the unit bottom, and move the lever of chuck cam in the direction of the arrow Ⓐ. (See Fig. 1)
2) Draw out the tray in the direction of the arrow Ⓑ, and remove a disc. (See Fig. 1)

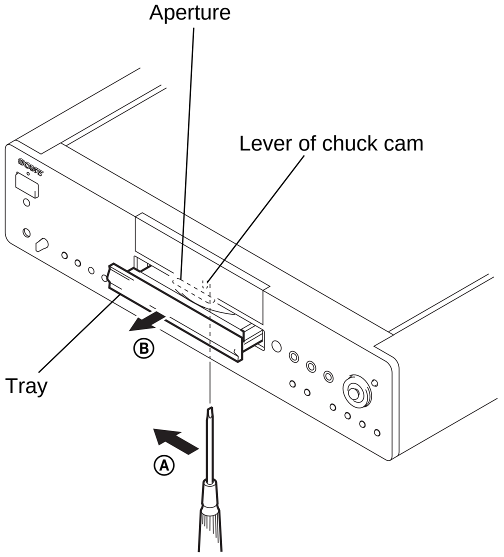


Fig. 1

3) Set the service jig (two flexible flat cables) (J-6090-109-A) as shown in Fig. 3.

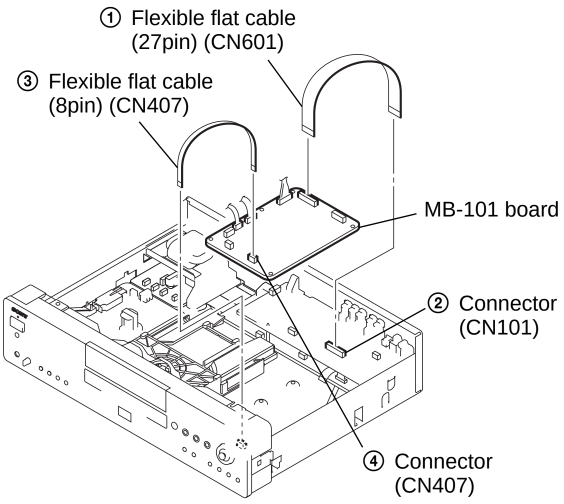


Fig. 3

3. HOW TO SERVICE MB-101 BOARD

1) Remove the top case from the set. (Refer to 2-1)
2) Remove the MB-101 board as shown in Fig. 2.

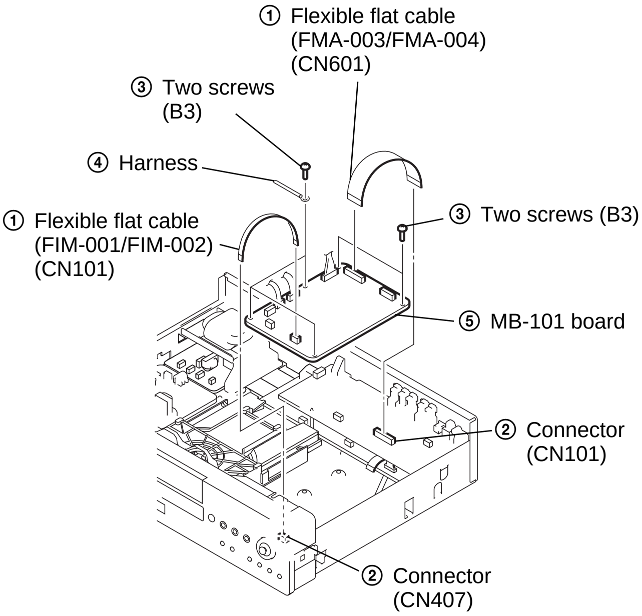


Fig. 2

4) Set the MB-101 board as shown in Fig. 4.

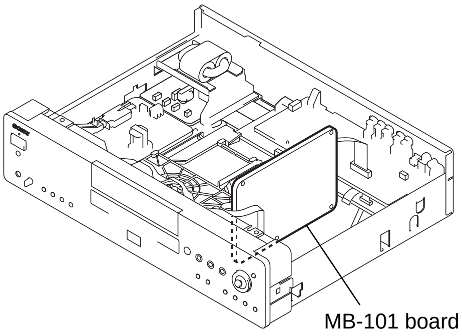


Fig. 4

SECTION 1 GENERAL

This section is extracted from instruction manual (3-070-853-11).

About this Manual

- Instructions in this manual describe the controls on the remote. You can also use the controls on the player if they have the same or similar names as those on the remote.
- The meaning of the icons used in this manual is described below:

Icon	Meaning
DVD VIDEO	Functions available for DVD VIDEOs or DVD-Rs/DVD-RWs in Video mode
DVD-RW	Functions available for DVD-RWs in VR (Video Recording) mode
VIDEO CD	Functions available for VIDEO CDs or CD-Rs/CD-RWs
SACD	Functions available for Super Audio CDs
CD	Functions available for music CDs or CD-Rs/CD-RWs
(hint icon)	More convenient features

"DVD" may be used as a general term for DVD VIDEOs, DVD-Rs, and DVD-RWs.

This Player Can Play the Following Discs

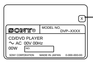
Format of discs	
DVD VIDEO	DVD VIDEO
DVD-RW	DVD RW
SACD	SUPER AUDIO CD
VIDEO CD	COMPACT disc DIGITAL VIDEO
Music CD	COMPACT disc DIGITAL AUDIO

"DVD VIDEO" and "DVD-RW" are trademarks.

Region code

Your player has a region code printed on the back of the unit and only will play DVD VIDEO discs (playback only) labeled with identical region codes.

DVDs labeled (ALL) will also play on this player.
If you try to play any other DVD, the message "Playback prohibited by area limitations." will appear on the TV screen. Depending on the DVD, no region code indication may be labeled even though playing the DVD is prohibited by area restrictions.



Example of discs that the player cannot play

The player cannot play the following discs:
- CD-ROMs (PHOTO CDs included)
- All CD-Rs/CD-RWs other than music and VCD format CD-Rs/CD-RWs
- Data part of CD-Extras
- DVD-ROMs
- DVD Audio discs

Also, the player cannot play the following discs:
- A DVD with a different region code (page 97).
- A disc recorded in a color system other than NTSC, such as PAL or SECAM (this player conforms to the NTSC color system).
- A disc that has a non-standard shape (e.g., card, heart).
- A disc with paper or stickers on it.
- A disc that has the adhesive of cellophane tape or a sticker still left on it.

Note

Some DVD-Rs, DVD-RWs, CD-Rs, or CD-RWs cannot be played on this player due to the recording quality or physical condition of the disc, or the characteristics of the recording device. DVD-RWs in VR mode may also take time to play back due to the recording condition.
Furthermore, the disc will not play if it has not been correctly finalized. For more information, see the operating instructions for the recording device.

Note on playback operations of DVDs and VIDEO CDs

Some playback operations of DVDs and VIDEO CDs may be intentionally set by software producers. Since this player plays DVDs and VIDEO CDs according to the disc contents the software producers designed, some playback features may not be available. Also, refer to the instructions supplied with the DVDs or VIDEO CDs.

Copyrights

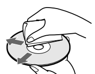
This product incorporates copyright protection technology that is protected by method claims of certain U.S. patents, other intellectual property rights owned by Macrovision Corporation, and other rights owners. Use of this copyright protection technology must be authorized by Macrovision Corporation, and is intended for home and other limited viewing uses only unless otherwise authorized by Macrovision Corporation. Reverse engineering or disassembly is prohibited.

Notes about the Discs

On handling discs
- To keep the disc clean, handle the disc by its edge. Do not touch the surface.

- Do not expose the disc to direct sunlight or heat sources such as hot air ducts, or leave it in a car parked in direct sunlight as the temperature may rise considerably inside the car.
- After playing, store the disc in its case.

On cleaning
- Before playing, clean the disc with a cleaning cloth.
Wipe the disc from the center out.

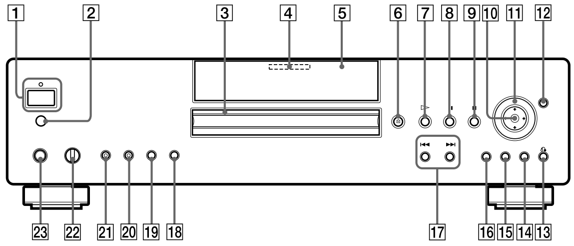


- Do not use solvents such as benzine, thinner, commercially available cleaners, or anti-static spray intended for vinyl LPs.

Index to Parts and Controls

For more information, refer to the pages indicated in parentheses.

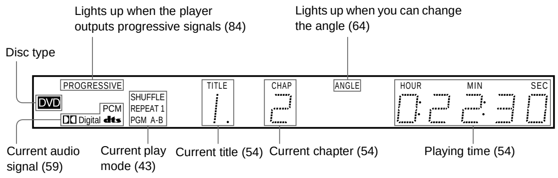
Front panel



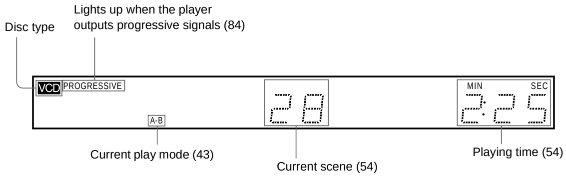
1 POWER switch/indicator (37)
2 (remote sensor) (16)
3 Disc tray (37)
4 MULTI CHANNEL indicator
Lights up when:
— playing a disc that contains multiple audio signal channels
— the disc is not inserted
5 Front panel display (9)
6 ≜ (open/close) button (37)
7 ▷ (play) button/indicator (37)
8 ❚❚ (pause) button/indicator (38) (77)
9 ■ (stop) button (37)
10 ←/↑/↓/→/ ENTER button (31)
11 Click shuttle (49)
12 JOG button/indicator (50)
13 RETURN button (42)
14 MENU button (40)
15 TOP MENU button (40)
16 DISPLAY button (13)
17 ◀◀/▶▶ (previous/next) buttons (38)
18 SACD indicator
Lights up when the disc is a Super Audio CD
19 DVD indicator
Lights up when the disc is a DVD
20 FL OFF button/indicator (86)
21 VIDEO OFF button/indicator (37)
22 PHONES LEVEL control (37)
23 PHONES jack (37)

Front panel display

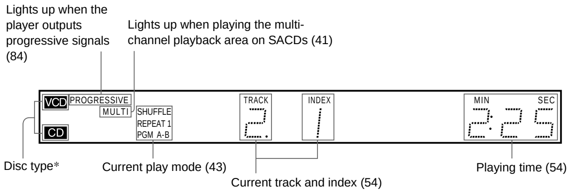
When playing back a DVD VIDEO/DVD-RW



When playing back a VIDEO CD (PBC)



When playing back an SACD, CD, or VIDEO CD (without PBC)

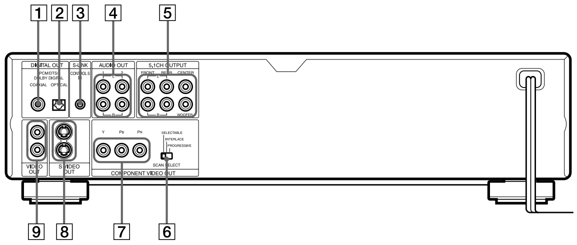


* When playing the SACD layer of SACD discs, the disc type is not displayed.

You can turn off the front panel display by:
— pressing FL OFF on the player
— using the scroll key and LCD screen on the remote (page 12)
— setting "DIMMER" of "CUSTOM SETUP" to "OFF" or "AUTO OFF" in the Setup Display (page 86).
When the front panel display turns off, the FL OFF indicator lights up on the player.

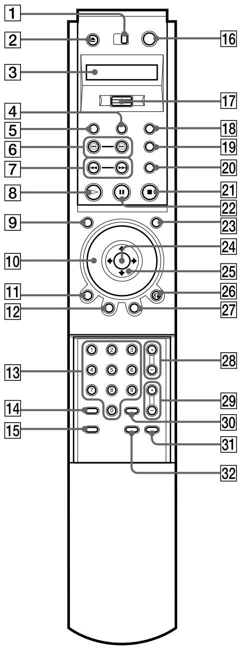
continued

Rear panel



1 DIGITAL OUT (COAXIAL) jack (25) (27) (29)
2 DIGITAL OUT (OPTICAL) jack (25) (27) (29)
3 S-LINK/CONTROL S IN jack (17)
4 AUDIO OUT L/R 1/2 jacks (24) (27) (29)
5 5.1CH OUTPUT jacks (25)
6 COMPONENT VIDEO OUT/SCAN SELECT switch (84)
7 COMPONENT VIDEO OUT (Y, PB, PR) jacks (20)
8 S VIDEO OUT 1/2 jacks (20)
9 VIDEO OUT 1/2 jacks (20)

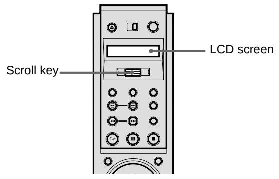
Remote



1 TV/DVD switch (78)
2 ≜ OPEN/CLOSE button (38)
3 LCD (Liquid Crystal Display) screen (12)
4 PROGRAM button (43)
5 VIDEO EQ (video equalizer) button (67)
6 ⏪/⏩ SEARCH buttons (49)
7 ⏮/⏭ PREV/NEXT (previous/next) buttons (38)
8 ▷ PLAY button (37)
The ▷ button has a tactile dot.
9 VIDEO ON/OFF button (37)
10 Click shuttle (49)
11 DISPLAY button (13)
12 TOP MENU button (40)
13 Number buttons (40)
The number 5 button has a tactile dot.
14 CLEAR button (43)
15 SEARCH MODE button (50)
16 I/⏻ (on/standby) button (37) (78)
17 Scroll key (12)
18 PICTURE MEMORY button (83)
19 BOOKMARK button (53)
20 REPLAY button (38)
21 ■ STOP button (37)
22 ❚❚ PAUSE button (38)
23 JOG button (50)
24 ENTER button (31)
25 ←/↑/↓/→ buttons (31)
26 ↩ RETURN button (42)
27 MENU button (40)
28 CH (channel) +/– buttons (78)
The + button has a tactile dot.
29 VOL (volume) +/– buttons (78)
The + button has a tactile dot.
30 ENTER button
31 WIDE MODE button (78)
32 TV/VIDEO button (78)

Guide to the Remote Control LCD Screen

The supplied remote has an LCD (Liquid Crystal Display) screen and scroll key for controlling the player without using the Control Menu Display. By pushing the scroll key up or down, you can call up various displays and functions such as "TIME/TEXT" and "SUBTITLE."



LCD contents

The following commands are contained in the LCD. The commands will scroll continuously if you keep the scroll key pushed up or down.

TIME/TEXT (page 55) ↔ FL ON/OFF (page 86) ↔ MULTI/2CH (page 41)
↕ AUDIO (page 58) ↕ SACD/CD (page 42)
↕ SUBTITLE (page 65) ↕ DVE (page 70)
↕ ANGLE (page 64) ↕ BNR (page 66)
↕ SURROUND (page 60) ↕ A-B (page 47)
↕ SHUFFLE (page 45) ↔ REPEAT (page 46)

Operating the LCD and scroll key

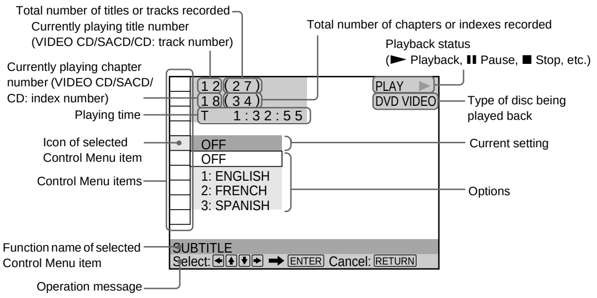
1 Toggle the scroll key up or down to select a command.

2 Point the remote at the [remote sensor icon] (remote sensor) on the player and press down on the word PUSH imprinted on the scroll key so that [icon] appears in the LCD screen.
The player will respond to the selected command as long as the command remains in the LCD screen. Some commands require you to press down on the scroll key repeatedly. For a description of each command listed above, refer to the pages in parentheses.

Guide to the Control Menu Display

Use the Control Menu to select a function that you would like to use. The Control Menu display appears when the DISPLAY button is pressed. For details, please refer to the page in parentheses.

Control Menu



List of Control Menu Items

TITLE (page 50)/SCENE (page 50)/TRACK (page 50)	Selects the title, scene, or track to be played.
CHAPTER (page 50)/INDEX (page 50)	Selects the chapter or index to be played.
TRACK (page 50)	Selects the track to be played.
INDEX (page 50)	Selects the index to be played.
TIME/TEXT (page 50) **TIME/MEMO (page 50)**	Checks the elapsed time and the remaining playback time. Input the time code for picture and music searching. Displays the DVD or SACD/CD text. Displays the label (Disc Memo) you assigned to a disc.
ORIGINAL/PLAY LIST (page 40)	Selects the type of titles (DVD-RW) to be played, the ORIGINAL one, or an edited PLAY LIST.
AUDIO (page 58)	Changes the audio setting.

continued

MULTI/2CH (page 41)	Selects the playback area on SACDs when available.
SUBTITLE (page 65)	Displays the subtitles. Changes the subtitle language.
ANGLE (page 64)	Changes the angle.
SURROUND (page 60)	Selects the surround functions.
ADVANCED (page 57)	Checks the information (bit rate or layer) on the disc while playing a DVD.
PARENTAL CONTROL (page 72)	Set to prohibit playback on this player.
SETUP (page 80)	QUICK Setup (page 31) Use Quick Setup to choose the desired language of the on-screen display, the aspect ratio of the TV, the audio output, and the appropriate speaker settings. CUSTOM Setup In addition to the Quick Setup setting, you can adjust other various settings. RESET Returns the settings in "SETUP" to the default setting.
PROGRAM (page 43)	Selects the title, chapter, or track to play in the order you want.
SHUFFLE (page 45)	Plays the title, chapter, or track in random order.
REPEAT (page 46)	Plays the entire disc (all titles/all tracks) repeatedly or one title/chapter/track repeatedly.
A-B REPEAT (page 47)	Specifies the parts you want to play repeatedly.
BNR (page 66)	Adjusts the picture quality by reducing the "block noise" or mosaic like patterns that appear on your TV screen.
VIDEO EQUALIZER (page 67)	Adjusts the video signal from the player. You can select the picture quality that best suits the program you are watching.
DIGITAL VIDEO ENHANCER (page 70)	Exaggerates the outline of the image to produce a sharper picture.
VIEWER (page 52)	Divides the screen into 9 subscreens to help you find the scene you want quickly.

Each time you press DISPLAY, the Control Menu display changes as follows:

Control Menu display 1
↓
Control Menu display 2
↓
ADVANCED display (Appears if you select any setting other than "OFF." See page 57.)
↓
Control Menu display off

When playing an SACD/CD disc, only the Control Menu display 1 will appear. The Control Menu items are different depending on the disc.

The Control Menu icon indicator lights up in green → when you select any item except "OFF." ("SURROUND," "PROGRAM," "SHUFFLE," "REPEAT," "A-B REPEAT," "BNR," "DIGITAL VIDEO ENHANCER" only). The "ANGLE" indicator lights up in green only when the angles can be changed. The "VIDEO EQUALIZER" indicator lights up in green when any setting other than "STANDARD" is selected. The "VIEWER" indicator lights up in green when a bookmark is set.

Quick Overview

A quick overview presented in this chapter will give you enough information to start using the player for your enjoyment. To use the surround sound features of this player, refer to "Hookups" on page 20.

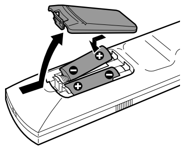
Notes
- You cannot connect this player to a TV that does not have a video input jack.
- Be sure to turn off the power of each component before connecting.

Step 1: Unpacking

Check that you have the following items:
- Audio/video cord (pinplug × 3 ←→ pinplug × 3) (1)
- S VIDEO cord (1)
- Remote commander (remote) RMT-D140A (1)
- Size AA (R6) batteries (2)

Step 2: Inserting Batteries into the Remote

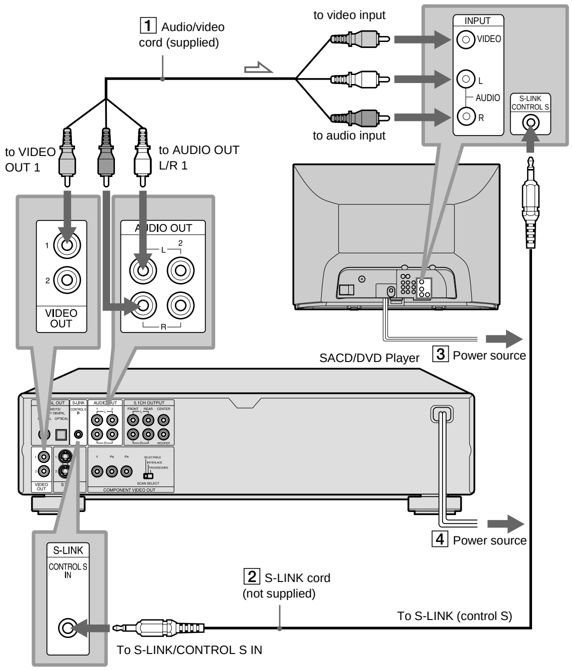
You can control the player using the supplied remote. Insert two size AA (R6) batteries by matching the ⊕ and ⊖ ends on the batteries to the markings inside the compartment. When using the remote, point it at the remote sensor on the player.



Notes
- Do not leave the remote in an extremely hot or humid place.
- Do not drop any foreign object into the remote casing, particularly when replacing the batteries.
- Do not expose the remote sensor to direct light from the sun or a lighting apparatus. Doing so may cause a malfunction.
- If you do not use the remote for an extended period of time, remove the batteries to avoid possible damage from battery leakage and corrosion.

Step 3: TV Hookups

Connect the supplied audio/video cord and the power cord in the order (1~4) shown below. Be sure to connect the power code last.



When connecting to a wide screen TV

Depending on the disc, the image may not fit your TV screen. If you want to change the aspect ratio, please refer to page 82.

continued

When connecting to a TV that accepts progressive (480p) format signals

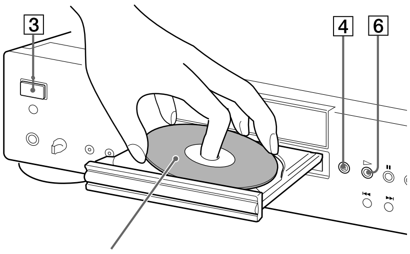
You need to use the COMPONENT VIDEO OUT jacks to view progressive signals. Hook up your TV using pattern C on page 20, and then run Quick Setup on page 31.

If your TV has an S-LINK (control S) input jack

You can control the player from a Sony TV, or control a Sony TV using the player. For instance, when you play a DVD, the TV's input will automatically switch to the jack to which you connected the player.
Connect the TV via the S-LINK/CONTROL S IN jack using an S-LINK cord (not supplied). Refer to the instructions supplied with the TV.

Step 4: Playing a Disc

1. **Turn on the TV.**
2. **Switch the input selector on the TV to the player.**



With the playback side facing down

3. **Press POWER on the player.**
4. **Press ≜ on the player to open the disc tray.**
5. **Place the disc on the tray with the playback side facing down.**
6. **Press ▷.**
   The disc tray closes and the player begins playing the disc.

After Step 6

Depending on the disc, a menu may be displayed on the TV screen. If so, select the item you want from the menu and play the DVD VIDEO (page 40) or VIDEO CD disc (page 42).

To stop playing

Press ■.

To take out the disc

Press ≜.

To turn off the player

Press I/⏻ on the remote. The player is set to standby mode and the power indicator lights up in red. Press POWER on the player to turn off completely.

Hooking Up the Player

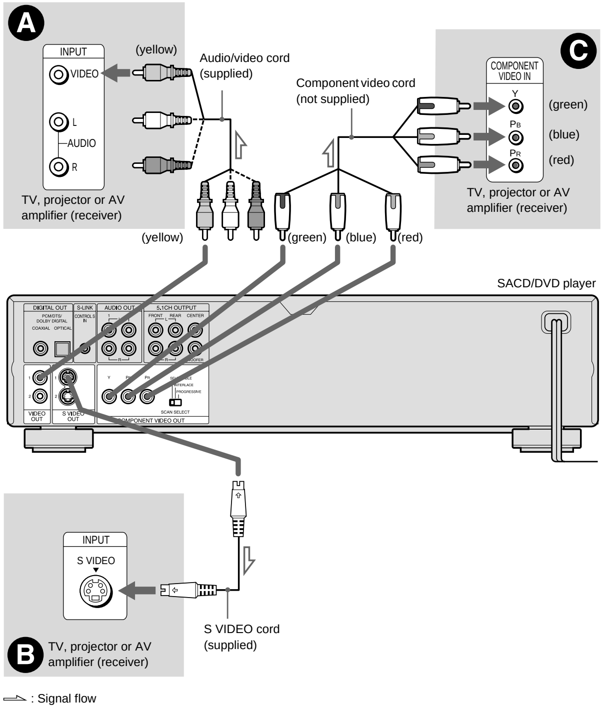
Follow Steps 1 to 4 to hook up and adjust the settings of the player.
Before you start, turn off the power, check that you have all of the supplied accessories, and insert the batteries into the remote (page 16).

Notes

- Plug cords securely to prevent unwanted noise.
- Refer to the instructions supplied with the components to be connected.

Step 1: Connecting the Video Cords

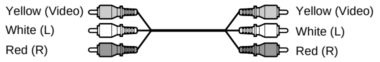
Connect this player to your TV monitor, projector, or AV amplifier (receiver) using a video cord. Select one of the patterns A through C, according to the input jack on your TV monitor, projector, or AV amplifier (receiver). In order to view progressive signal (480p) pictures with a compatible TV, projector, or monitor, you must use connection C.



continued

A If you are connecting to a video input jack

Connect the yellow plug of the audio/video cord (supplied) to the yellow (video) jacks. You will enjoy standard quality images.



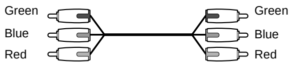
Use the red and white plugs to connect to the audio input jacks (page 24).

B If you are connecting to an S VIDEO input jack

Connect the S VIDEO cord (supplied). You will enjoy high quality images.

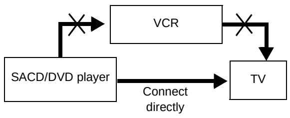
C If you are connecting to a monitor, projector, or AV amplifier (receiver) having component video input jacks (Y, P_B, P_R)

Connect the component via the COMPONENT VIDEO OUT jacks using the component video cord (not supplied) or three video cords (not supplied) of the same kind and length. You will enjoy accurate color reproduction and high quality images. If your TV accepts progressive (480p) format signals, you must use this connection and set "COMPONENT OUT" to "PROGRESSIVE" in "SCREEN SETUP" (page 82).



Notes

- Do not connect the player to a VCR. If you pass the player signals via the VCR, you may not receive a clear image on the TV screen.



- Consumers should note that not all high definition television sets are fully compatible with this product and may cause artifacts to be displayed in the picture. In the case of 480 progressive scan picture problems, it is recommended that the user switch the connection to the standard definition output. If there are questions regarding your Sony TV set's compatibility with this model 480p DVD player, please contact our customer service center.

Step 2: Connecting the Audio Cords

Refer to the chart below to select the connection that best suits your system. The surround effects you will enjoy depend on the connections and components you use.

Select a connection

Select one of the following connections, A through D.

Connection	Components to be connected
A (page 24)	TV (stereo)
B (page 25)	AV amplifier (receiver) having 5.1ch input jacks • 4 speakers (front L and R, rear L and R) • 6 speakers (front L and R, center, rear L and R, subwoofer)
B (page 25)	AV amplifier (receiver) having a Dolby* Digital or DTS** decoder and a digital input jack • 6 speakers (front L and R, center, rear L and R, subwoofer)
C (page 27)	Stereo amplifier (receiver) (having L and R audio input jacks only, or having a digital input jack) • 2 speakers (front L and R)
C (page 27)	MD deck/DAT deck
D (page 29)	AV amplifier (receiver) with a Dolby Surround (Pro Logic) decoder (having L and R audio input jacks only, or having a digital input jack) • 3 speakers (front L and R, and rear (monaural)) • 6 speakers (front L and R, center, rear L and R, subwoofer)

To enjoy SACD Multi or 96kHz/24bit sound, use the connection B.

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** Manufactured under license from Digital Theater Systems, Inc. US Pat. No. 5,451,942 and other world-wide patents issues and pending. "DTS" and "DTS Digital Surround" are trademarks of Digital Theater Systems, Inc. © 1996 Digital Theater Systems, Inc. All rights reserved.

continued

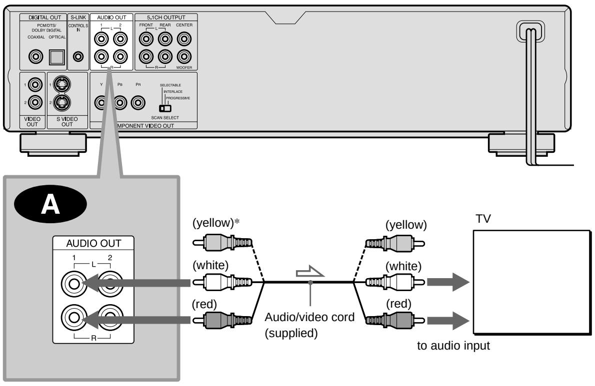
A Connecting to your TV

This connection will use your TV speakers for sound.

■Recommended surround sound effects for this connection

- TVS DYNAMIC (page 60)
- TVS WIDE (page 60)

SACD/DVD player



: Signal flow

*The yellow plug is used for video signals (page 20).

B Connecting to an AV amplifier (having 5.1ch input jacks or a digital input jack) and 4 to 6 speakers

If your AV amplifier (receiver) has 5.1 channel inputs, use B-1.
If you want to use the Dolby Digital or DTS decoder function on your AV amplifier (receiver), connect to its digital jack using B-2. With the following connections, you can enjoy a more realistic audio presence in the comfort of your own home.

B-1: Connecting to the 5.1ch input jacks

You can enjoy 5.1ch surround sound using the internal Dolby Digital, DTS, or SACD multi decoder of this player. You can also enjoy Dolby Surround (Pro Logic) sounds, or surround sounds using various "SURROUND" modes (page 60).

■Recommended surround sound effects for this connection

When 6 speakers are connected. (Set "SURROUND" to "OFF.")

- Dolby Digital (5.1ch) (page 97)
- DTS (5.1ch) (page 97)
- SACD Multi channel (page 97)

B-2: Connecting to a digital jack

This connection will allow you to use the Dolby Digital or DTS decoder function of your AV amplifier (receiver). You are not able to enjoy the surround sound effects of the player.

■Recommended surround sound effects using this connection with your amplifier (receiver)

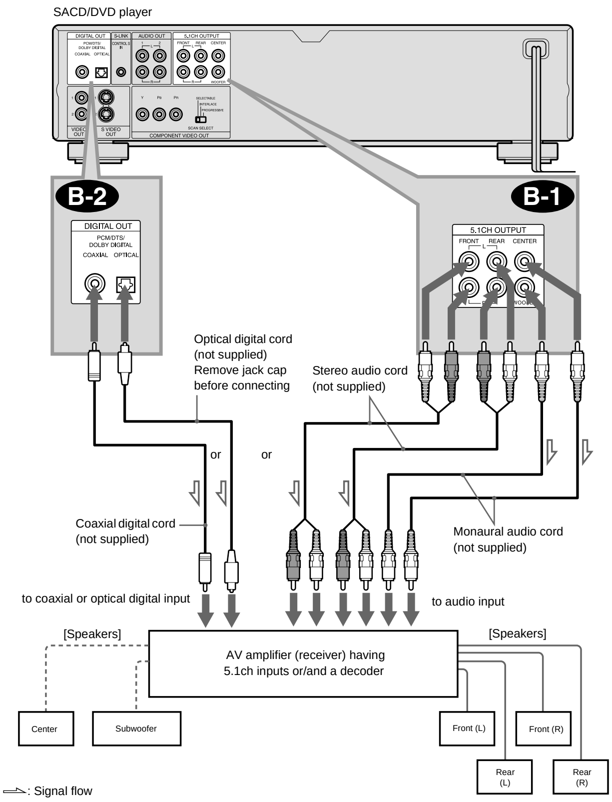
- Dolby Digital (5.1ch) (page 97)
- DTS (5.1ch) (page 97)
- 96kHz/24bit PCM

When using connection B-2, refer to the operating instructions of the receiver (amplifier) for correct speaker setting location.

Notes

- After you have completed the connection, be sure to set "DOLBY DIGITAL" to "DOLBY DIGITAL" (page 31) and "DTS" to "DTS" (page 31). Otherwise, no sound or a loud noise will come from the speakers.
- When you connect an amplifier (receiver) that conforms to the 96kHz sampling frequency, set "48kHz/96kHz PCM" to "96kHz/24bit" (page 89).
- SACD audio signals are not output from the digital jack.

continued



To enhance the surround sound effects:
- Use high-performance speakers.
- Use front, rear, and center speakers having the same size and performance.
- Place a subwoofer between the right and left front speakers.

C Connecting to a stereo amplifier (receiver) and 2 speakers/Connecting to an MD deck or DAT deck

This connection will use your 2 front speakers connected to your stereo amplifier (receiver) for sound. If the stereo amplifier (receiver) has audio input jacks L and R only, use C-1. If the amplifier (receiver) has a digital input jack, use C-2. When connecting to an MD deck or a DAT deck, use C-2. In this case, you can also connect the player directly to the MD deck or DAT deck without using your stereo amplifier (receiver).

■Recommended surround sound effects for the C-1 connection only

- TVS STANDARD (page 60)

In connection C-1, you can use the supplied audio/video cord instead of using a separate audio cord.

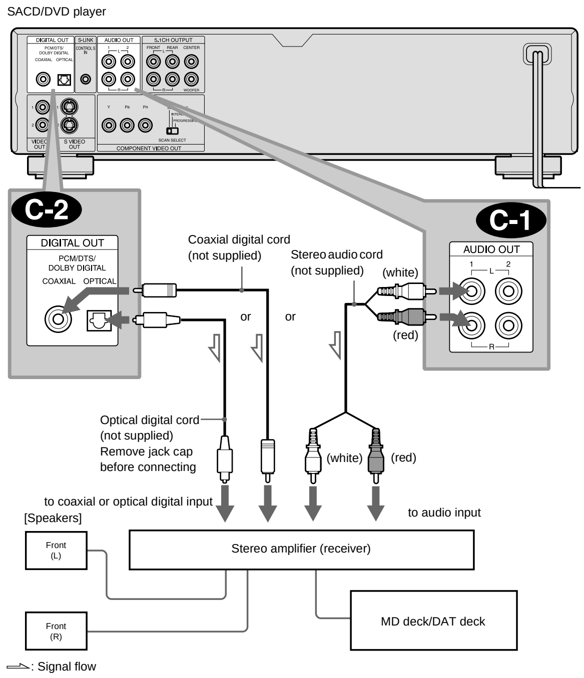
To realize better surround sound effects, make sure that your listening position is in between your speakers.

Note

SACD audio signals are not output from the digital jack.

Hookups

continued



D Connecting to an AV amplifier (receiver) having a Dolby Surround (Pro Logic) decoder and 3 to 6 speakers

This connection will allow you to enjoy the surround effects of the Dolby Surround (Pro Logic) decoder on your amplifier (receiver). If you have an AV amplifier (receiver) equipped with a Dolby Digital or DTS decoder, refer to page 25.
You can enjoy the Dolby Surround effects only when playing Dolby Surround audio or multi-channel audio (Dolby Digital) discs.
This connection needs a minimum of 3 speakers (front L and R, and rear (monaural)). The surround effects are enhanced if 6 speakers (front L and R, center, rear L and R, and subwoofer) are used.
If your amplifier (receiver) has L and R audio input jacks only, use D-1. If your amplifier (receiver) has a digital input jack, use D-2.

■Recommended surround sound effects using this connection with your amplifier (receiver)

- Dolby Surround (Pro Logic) (page 97)

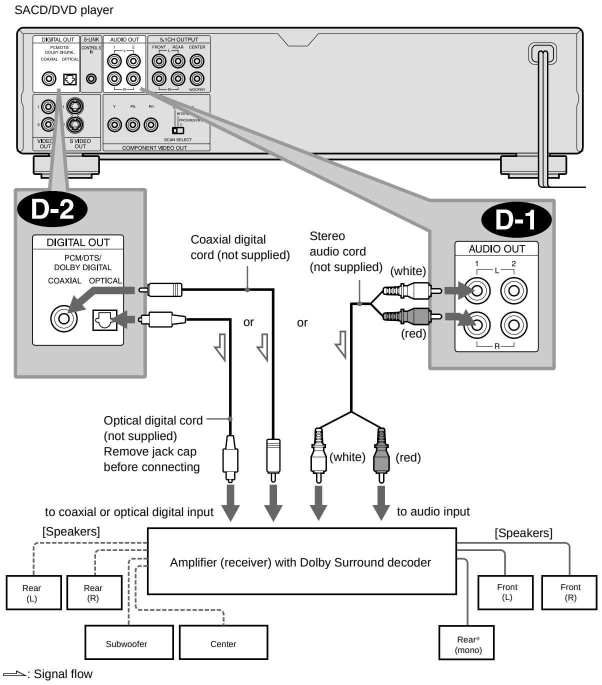
For correct speaker setting location, please refer to the operating instructions of the amplifier (receiver).

Note

SACD audio signals are not output from the digital jack.

Hookups

continued



*When connecting 6 speakers, replace the monaural rear speaker with a center speaker, 2 rear speakers and a subwoofer.

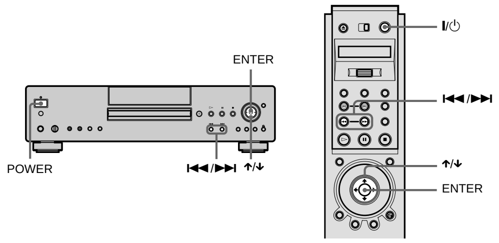
Step 3: Connecting the Power Cord

Plug the player and TV power cords into an AC outlet.

Do not connect the power cord of your player to the "switched" power socket of an amplifier (receiver). When you turn off the power of your amplifier (receiver), the menu setting for the player such as Playback Memory may be lost.

Step 4: Quick Setup

Follow the steps below to make the minimum number of basic adjustments for using the player. To skip an adjustment, press ▶▶I. To return to the previous adjustment, press I◀◀.

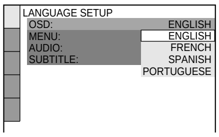


1 **Turn on the TV.**

2 **Switch the input selector on the TV to the player.**

3 **Press POWER on the player and press I/⏻ on the remote.**
"Press [ENTER] to run QUICK SETUP" appears at the bottom of the screen. If this message does not appear, select "QUICK" under "SETUP" in the Control Menu to run Quick Setup (page 80).

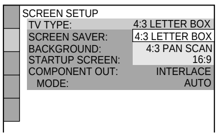
4 **Press ENTER without inserting a disc.**
The Setup Display for selecting the language used in the on-screen display appears.



continued

5 **Press ↑/↓ to select a language.**
The player uses the language selected here to display the menu and subtitles as well.

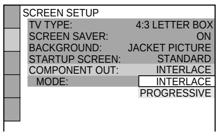
6 **Press ENTER.**
The Setup Display for selecting the aspect ratio of the TV to be connected appears.



7 **Press ↑/↓ to select the item.**

TV Type	You select	Page
4:3 standard TV	4:3 LETTER BOX or 4:3 PAN SCAN	82
A wide-screen TV or a 4:3 standard TV with a wide-screen mode	16:9	82

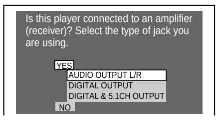
8 **Press ENTER.**
The Setup Display for selecting the type of video signal appears.



9 **Press ↑/↓ to select the item.**
Select PROGRESSIVE only if you have made video connection C (page 20) and wish to view progressive video signals.

TV Type	You select	Page
Interlace format TV (standard TV)	INTERLACE	84
Progressive format TV	PROGRESSIVE	84

10 **Press ENTER.**
The Setup Display for selecting the type of jack used to connect your amplifier (receiver) appears.

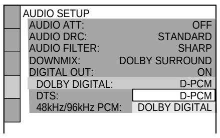


11 **Press ↑/↓ to select the item, then press ENTER.**

Audio Cord Connecting Type	You select
C-1 D-1	AUDIO OUTPUT L/R
B-2 C-2 D-2	DIGITAL OUTPUT
B-1 or both B-1 and B-2	DIGITAL & 5.1CH OUTPUT
A	NO

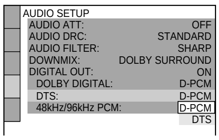
- When "NO" or "AUDIO OUTPUT L/R" is selected, Quick Setup is finished and connections are complete.
- When "DIGITAL OUTPUT" or "DIGITAL & 5.1CH OUTPUT" is selected, the Setup Display for "DOLBY DIGITAL" appears.

12 **Press ↑/↓ to select the item.**
Choose the item that matches the audio connection you selected in pages 25 to 29 (B through D).



Audio Cord Connection Type	You select	Page
C-2 D-2	D-PCM	89
B-2	DOLBY DIGITAL (only if the amplifier (receiver) has a Dolby Digital decoder)	89

13 **Press ENTER.**
"DTS" is selected.



continued

14 Press ↑/↓ to select the item.

Choose the item that matches the audio connection you selected in pages 25 to 29 (B through D).

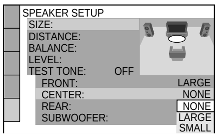
Audio Cord Connection Type	You select	Page
C-2 D-2	D-PCM	89
B-2	DTS (only if the amplifier (receiver) has a DTS decoder)	89

15 Press ENTER.

- When "DIGITAL OUTPUT" is selected in Step 11, Quick Setup is finished. All connections and setup operations are complete.
- When "DIGITAL & 5.1CH OUTPUT" is selected in Step 11, the Setup Display for "SPEAKER SETUP" appears.

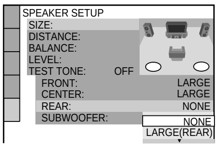
16 Press ↑/↓ to select the size of the center speaker.

If no center speaker is connected, select "NONE." Refer to page 91 for each selection item.



17 Press ENTER.

The Setup Display for selecting the size of the rear speaker appears.

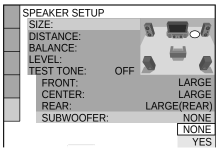


18 Press ↑/↓ to select the size.

If no rear speaker is connected, select "NONE."
"SIDE" and "REAR" refer to the speakers' position relative to your listening position. Refer to page 91 for each selection item.

19 Press ENTER.

The Setup Display for selecting whether or not you have connected a subwoofer appears.



20 Press ↑/↓ to select the item.

21 Press ENTER.

Quick Setup is finished. All connections and setup operations are complete.

Note

You can directly start Quick Setup only when you run it for the first time.
To run Quick Setup a second time, select "QUICK" under "SETUP" in the Control Menu (page 80).

Enjoying the surround sound effects

To enjoy the surround sound effects of this player or your amplifier (receiver), the following items must be set as described below for the audio connection you selected in pages 25 to 29 (B through D). Each of these are the default settings and do not need to be adjusted when you first connect the player. Refer to page 80 for using the Setup Display.

Audio Connection (pages 25 to 29)

A

No additional settings are needed.

B-1

Item	You select	Page
DISTANCE BALANCE LEVEL	Set according to the connected speakers	91

- If the sound distorts even when the volume is turned down, set "AUDIO ATT" to "ON" (page 88).

B-2 C-2 D-2

Item	You select	Page
DOWNMIX	DOLBY SURROUND	88
DIGITAL OUT	ON	88

- Set "48kHz/96kHz PCM" to "96kHz/24bit," only if you connect an amplifier (receiver) that conforms to 96 kHz digital audio input (page 89).

continued

C-1 D-1

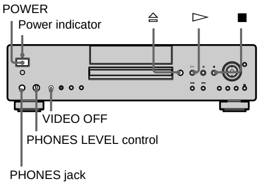
Item	You select	Page
DOWNMIX	DOLBY SURROUND	88

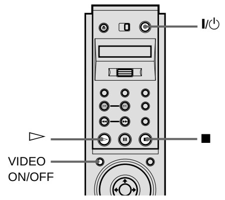
- If the sound distorts even when the volume is turned down, set "AUDIO ATT" to "ON" (page 88).

Playing Discs

DVD VIDEO DVD-RW VIDEO CD SACD CD

Depending on the DVD or VIDEO CD, some operations may be different or restricted. Refer to the operating instructions supplied with your disc.





1 Turn on your TV.

2 Switch the input selector on the TV to the player.

When using an amplifier (receiver)

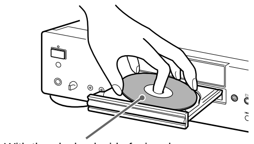
Turn on the amplifier (receiver) and select the appropriate channel.

3 Press POWER on the player.

The player enters standby mode and the power indicator lights up in red.

4 Press ≜ on the player, and place a disc on the disc tray.

The player automatically turns on and the power indicator lights up in green.



With the playback side facing down

5 Press ▷.

The disc tray closes, and the player starts playback (continuous play). Adjust the volume on the TV or the amplifier (receiver).

After following Step 5

Depending on the disc, a menu may appear on the TV screen. You can play the disc interactively by following the instructions on the menu. DVD VIDEO (page 40), VIDEO CD (page 42).

To turn on the player

Press POWER on the player. The player enters standby mode and the power indicator lights up in red. Press I/⏻ on the remote. The player turns on and the power indicator lights up in green. In standby mode, the player also turns on by pressing ≜ on the player or by pressing ▷.

To turn off the player

Press I/⏻ on the remote. The player enters standby mode and the power indicator lights up in red. To turn off the player completely, press POWER on the player. While playing a disc, do not turn off the player by pressing POWER. Doing so may cancel the menu settings. When you turn off the player, first press ■ to stop playback and then press I/⏻ on the remote.

continued

To use headphones

Connect headphones to the PHONES jack and adjust the headphones' volume by turning PHONES LEVEL.

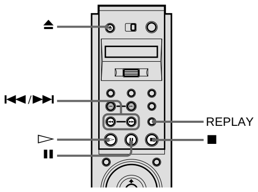
To use the VIDEO ON/OFF button

You can switch the video output on or off. Press VIDEO ON/OFF (or VIDEO OFF on the player) to switch the video output off. When no video signal output from the player, the VIDEO OFF indicator lights up on the player.

Note

SACD audio signals are not output from the digital jack.

Additional operations



To	Operation
Stop	Press ■
Pause	Press ❚❚
Resume play after pause	Press ❚❚ or ▷
Go to the next chapter, track or scene in continuous play mode	Press ⏭
Go back to the preceding chapter, track or scene in continuous play mode	Press ⏮
Stop play and remove the disc	Press ⏏
Replay the previous scene (DVD VIDEO only)	Press REPLAY

💡 The Replay function is useful when you want to review a scene or dialog that you missed.

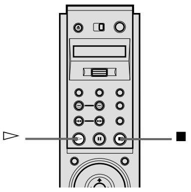
Note

You may not be able to use the Replay function with some scenes.

Resuming Playback from the Point Where You Stopped the Disc (Resume Play)

DVD VIDEO DVD-RW VIDEO CD SACD CD

When you stop the disc, the player remembers the point where you pressed ■ and "RESUME" appears on the front panel display. As long as you do not open the disc tray, Resume Play works even if the player enters standby mode by pressing I/⏻.



1 While playing a disc, press ■ to stop playback.
"RESUME" appears on the front panel display and you can restart the disc from the point where you stopped the disc.
If "RESUME" does not appear, Resume Play is not available.

2 Press ▷.
The player starts playback from the point where you stopped the disc in Step 1.

💡 To play from the beginning of the disc, press ■ twice, then press ▷.

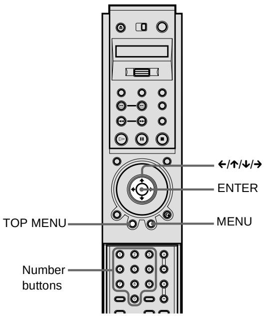
Notes

- Depending on where you stopped the disc, the player may not resume playback from exactly the same point.
- The point where you stopped playing is cleared when:
  - — you turn the power off by pressing POWER on the player.
  - — you change the play mode.
  - — you change the settings on the Setup Display.

Using the DVD's Menu

DVD VIDEO

A DVD is divided into long sections of a picture or a music feature called "titles." When you play a DVD which contains several titles, you can select the title you want using the TOP MENU button.
When you play DVDs that allow you to select items such as the language for the subtitles and the language for the sound, select these items using the MENU button.



1 Press TOP MENU or MENU.
The disc's menu appears on the TV screen.
The contents of the menu vary from disc to disc.

2 Press ←/↑/↓/→ or the number buttons to select the item you want to play or change.

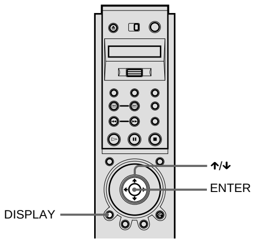
3 Press ENTER.

💡 You can also display the disc's menu by pressing TOP MENU or MENU on the player.

Selecting "ORIGINAL" or "PLAY LIST" on a DVD-RW Disc

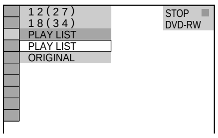
DVD-RW

Some DVD-RW discs in VR (Video Recording) mode have two types of titles for playback: originally recorded titles (ORIGINAL) and titles that can be created on recordable DVD players for editing (PLAY LIST). You can select the type of titles to be played.



1 Press DISPLAY in stop mode.
The Control Menu appears.

2 Press ↑/↓ to select (ORIGINAL/PLAY LIST), then press ENTER.
The options for "ORIGINAL/PLAY LIST" appear.



3 Press ↑/↓ to select the setting.
- PLAY LIST: plays the titles created from "ORIGINAL" for editing.
- ORIGINAL: plays the titles originally recorded.

4 Press ENTER.

To turn off the Control Menu

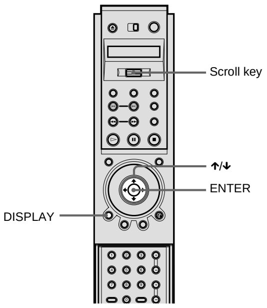
Press DISPLAY repeatedly until the Control Menu is turned off.

Note

Repeat Play and A-B Repeat Play work only within the titles of the selected type.

Selecting a Playback Area for an SACD Disc

SACD



Selecting a playback area on a 2 channel + multi-channel SACD

Some SACDs consist of a 2 channel playback area and a multi-channel playback area. You can select the playback area you want to listen to.

1 Toggle the scroll key up or down so that "MULTI/2CH" appears in the LCD screen.

2 Press down on the scroll key repeatedly to select "MULTI" for a multi-channel playback area or "2CH" for a 2 channel playback area.

"MULTI" appears in the front panel display when playing a Multi-channel playback area.

continued

To select a playback area using the Control Menu

1 Press DISPLAY.
The Control Menu appears.

2 Press ↑/↓ to select (MULTI/2CH), then press ENTER.

3 Press ↑/↓ to select the playback area, "MULTI" or "2CH," then press ENTER.

To turn off the Control Menu

Press DISPLAY repeatedly until the Control Menu is turned off.

Selecting a playback layer when playing a hybrid SACD

Some SACDs consist of an HD layer and a CD layer. You can select the playback layer you want to listen to.

1 While the disc is stopped, toggle the scroll key up or down so that "SACD/CD" appears in the LCD screen.

2 Press down on the scroll key repeatedly to select "SACD" for an HD layer or "CD" for a CD layer.
When playing the CD layer, "CD" appears in the front panel display.

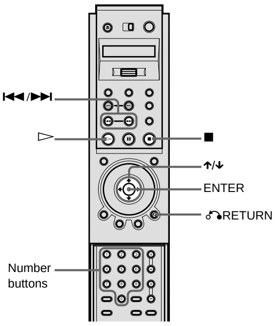
Notes

- For details about SACD discs, see page 97 (Super Audio CD).
- Each play mode function works only within the selected layer or playback area.

Playing VIDEO CDs with PBC Functions (PBC Playback)

VIDEO CD

With PBC (Playback Control) functions, you can enjoy simple interactive operations, search functions, and other such operations. PBC playback allows you to play VIDEO CDs interactively by following the menu on the TV screen.



1 Start playing a VIDEO CD with PBC functions.
The menu for your selection appears.

2 Select the item number you want by pressing ↑/↓ or the number buttons.

3 Press ENTER.

4 Follow the instructions in the menu for interactive operations.
Refer to the instructions supplied with the disc, as the operating procedure may differ depending on the VIDEO CD.

To go back to the menu

Press RETURN.

💡 To play without using PBC, press ⏮/⏭ or the number buttons while the player is stopped to select a track, then press ▷ or ENTER.
"Play without PBC" appears on the TV screen and the player starts continuous play. You cannot play still pictures such as a menu.
To return to PBC playback, press ■ twice then press ▷.

Note

Depending on the VIDEO CD, "Press ENTER" in Step 3 may appear as "Press SELECT" in the instructions supplied with the disc. In this case, press ▷.

Various Play Mode Functions (Program Play, Shuffle Play, Repeat Play, A-B Repeat Play)

You can set the following play modes:

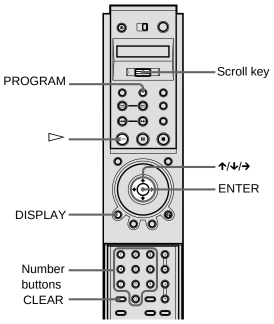
- Program Play (page 43)
- Shuffle Play (page 45)
- Repeat Play (page 46)
- A-B Repeat Play (page 47)

Note

The play mode is canceled when:
— you open the disc tray.
— the player enters standby mode by pressing I/⏻ on the remote.
— you turn the power off by pressing POWER on the player.

Creating your own program (Program Play) DVD VIDEO VIDEO CD SACD CD

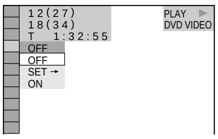
You can play the contents of a disc in the order you want by arranging the order of the titles, chapters, or tracks on the disc to create your own program. You can program up to 99 titles, chapters, and tracks.



continued

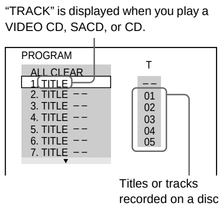
1 Press DISPLAY twice (when playing an SACD/CD, press once).
The Control Menu appears.

2 Press ↑/↓ to select (PROGRAM), then press ENTER.
The options for "PROGRAM" appear.

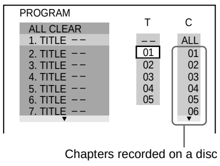


3 Press ↑/↓ to select "SET →," then press ENTER.
The display for programming appears.

"TRACK" is displayed when you play a VIDEO CD, SACD, or CD.

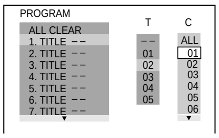


4 Press →.
The cursor moves to the title or track (in this case, "01").

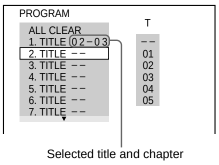


5 Select the title, chapter, or track you want to program.

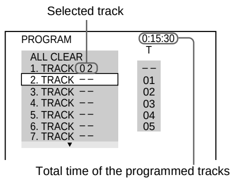
■When playing a DVD VIDEO
For example, select chapter "03" of title "02."
Press ↑/↓ or the number buttons to select "02" under "T," then press ENTER.



Next, press ↑/↓ or the number buttons to select "03" under "C," then press ENTER.



■When playing a VIDEO CD, SACD, or CD
For example, select track "02."
Press ↑/↓ or the number buttons to select "02" under "T," then press ENTER.
A track number may be displayed in 3 digits for an SACD.



6 To program other titles, chapters, or tracks, repeat Steps 4 to 5.
The programmed titles, chapters, and tracks are displayed in the selected order.

7 Press ▷ to start Program Play.
Program Play begins.
When the program ends, you can restart the same program again by pressing ▷.

To return to normal play

Press CLEAR, or select "OFF" in Step 3.
To play the same program again, select "ON" in Step 3 and press ▷.

To turn off the Control Menu

Press DISPLAY repeatedly until the Control Menu is turned off.

To change or cancel a program

1 Follow Steps 1 through 3 of "Creating your own program (Program Play)."

2 Select the program number of the title, chapter, or track you want to change or cancel using ↑/↓ or the number buttons, and press →.

3 Follow Step 5 for new programming. To cancel a program, select "--" under "T," then press ENTER.

To cancel all the titles, chapters, or tracks in the programmed order

1 Follow Steps 1 through 3 of "Creating your own program (Program Play)."

2 Press ↑ and select "ALL CLEAR."

3 Press ENTER.

💡 You can do Repeat Play or Shuffle Play of the programmed titles, chapters, or tracks. During the Program Play, toggle the scroll key up or down to select "REPEAT" or "SHUFFLE" and press down on the scroll key. Or set "REPEAT" or "SHUFFLE" to "ON" using the Control Menu display.

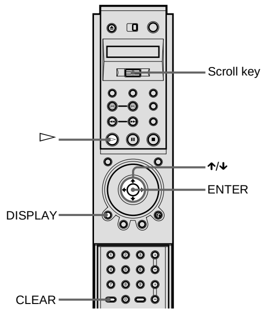
💡 You can select "PROGRAM" directly by pressing PROGRAM.

Note

The number of titles, chapters, or tracks displayed are the same as the number of titles, chapters, or tracks recorded on a disc.

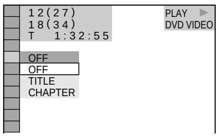
Playing in random order (Shuffle Play) DVD VIDEO VIDEO CD SACD CD

You can have the player "shuffle" titles, chapters, or tracks and play them in random order. Subsequent "shuffling" may produce a different playing order.



1 Press DISPLAY twice during playback (When playing an SACD/CD, press once).
The Control Menu appears.

2 Press ↑/↓ to select (SHUFFLE), then press ENTER.
The options for "SHUFFLE" appear.



continued

3 Press ↑/↓ to select the item.

■ **When playing a DVD VIDEO (Program Play is set to "OFF")**

- TITLE: shuffles titles and plays them in random order.
- CHAPTER: shuffles chapters and plays them in random order.

■ **When playing a VIDEO CD/ SACD/CD (Program Play is set to "OFF")**

- TRACK: shuffles tracks and plays them in random order.

■ **When Program Play is set to "ON"**

- ON: shuffles titles or tracks selected in Program Play and plays them in random order.

4 Press ENTER.

To return to normal play

Press CLEAR or select "OFF" in Step 3.

To turn off the Control Menu

Press DISPLAY repeatedly until the Control Menu is turned off.

💡 You can set Shuffle Play while the player is stopped. After selecting the "SHUFFLE" option, press ▷. Shuffle Play starts.

💡 You can use the LCD and scroll key on the remote to select Shuffle Play. Toggle the scroll key up or down so that "SHUFFLE" appears in the LCD screen. Then press down on the scroll key repeatedly to select an option.

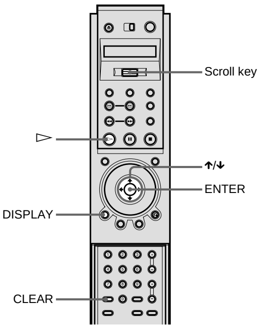
Note

Up to 200 chapters in a disc can be played in random order when "CHAPTER" is selected.

Playing repeatedly (Repeat Play)

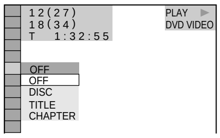
DVD VIDEO | DVD-RW | VIDEO CD | SACD | CD

You can play all of the titles or tracks on a disc or a single title, chapter, or track repeatedly.
You can use a combination of Shuffle or Program Play modes.



1 Press DISPLAY twice during playback (when playing an SACD/CD, press once).
The Control Menu appears.

2 Select [REPEAT icon] (REPEAT) using ↑/↓, then press ENTER.
The options for "REPEAT" appear.



3 Press ↑/↓ to select the item.

■ **When playing a DVD VIDEO (Program Play and Shuffle Play are set to "OFF")**

- DISC: repeats all of the titles.
- TITLE: repeats the current title on a disc.
- CHAPTER: repeats the current chapter.

■ **When playing a DVD-RW**

- DISC: repeats all the titles of the selected type.
- TITLE: repeats the current title on a disc.
- CHAPTER: repeats the current chapter.

■ **When playing a VIDEO CD/ SACD/CD (Program Play and Shuffle Play are set to "OFF")**

- DISC: repeats all of the tracks.
- TRACK: repeats the current track.

■ **When Program Play is set to "ON" or Shuffle Play is activated**

- ON: repeats Program Play or Shuffle Play.

4 Press ENTER.

To return to normal play

Press CLEAR, or select "OFF" in Step 3.

To turn off the Control Menu

Press DISPLAY repeatedly until the Control Menu is turned off.

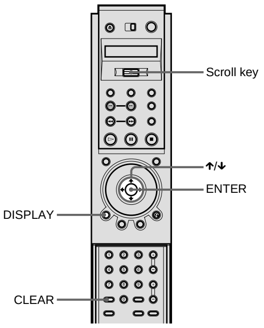
💡 You can set Repeat Play while the player is stopped. After selecting the "REPEAT" option, press ▷. Repeat Play starts.

💡 You can use the LCD and scroll key on the remote to select Repeat Play. Toggle the scroll key up or down so that "REPEAT" appears in the LCD screen. Then press down on the scroll key repeatedly to select an option.

Repeating a specific portion (A-B Repeat Play)

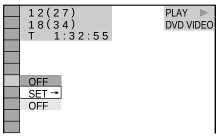
DVD VIDEO | DVD-RW | VIDEO CD | SACD | CD

You can play a specific portion of a title, chapter or track repeatedly. (This function is useful when you want to memorize lyrics, etc.)



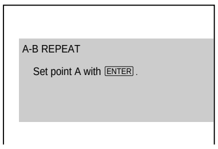
1 Press DISPLAY twice during playback (when playing an SACD/CD, press once).
The Control Menu appears.

2 Press ↑/↓ to select [A-B icon] (A-B REPEAT), then press ENTER.
The options for "A-B REPEAT" appear.

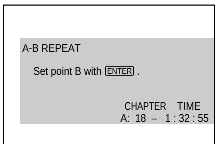


continued

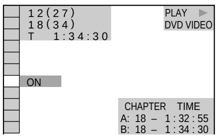
3 Press ↑/↓ to select "SET →," then press ENTER.
The "A-B REPEAT" setting display appears.



4 During playback, when you find the starting point (point A) of the portion to be played repeatedly, press ENTER.
The starting point (point A) is set.



5 When you reach the ending point (point B), press ENTER again.
The set points are displayed and the player starts repeating this specific portion.
"A-B" appears on the front panel display during A-B Repeat Play.



To return to normal play

Press CLEAR, or select "OFF" in Step 3.

To turn off the Control Menu

Press DISPLAY repeatedly until the Control Menu is turned off.

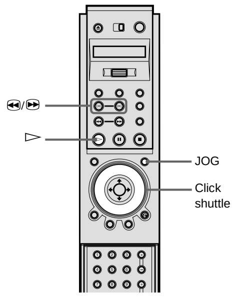
💡 You can use the LCD and scroll key on the remote to select A-B Repeat. Toggle the scroll key up or down so that "A-B" appears in the LCD screen. Then press down on the scroll key once to set point A. Press it again to set point B.

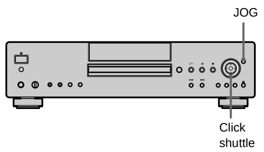
Notes

- You can set A-B Repeat Play for only one specific section.
- When you set A-B Repeat Play, the settings for Shuffle Play, Repeat Play, and Program Play are canceled.
- A-B Repeat Play does not work for titles containing still pictures on a DVD-RW in VR mode.

Searching for a Particular Point on a Disc (Search, Scan, Slow-motion Play, Freeze Frame)

You can quickly locate a particular point on a disc by monitoring the picture or playing back slowly.





Note

Depending on the DVD/VIDEO CD, you may not be able to do some of the operations described.

Locating a point quickly (Search)

DVD VIDEO | DVD-RW | VIDEO CD | SACD | CD

During playback, keep pressing ▶▶ to locate a point in the playback direction or keep pressing ◀◀ to locate a point in the opposite direction. When you find the point you want, release the button to return to normal playback speed.

Using the Click shuttle (Shuttle mode)

DVD VIDEO | DVD-RW | VIDEO CD | SACD | CD

Turn the click shuttle. The playback speed changes depending on the turning direction and degree of rotation as follows:

During playback

FF2▶▶ Fast forward (faster than FF1▶▶)
↕
FF1▶▶ Fast forward
↕
×2▶ (DVD VIDEO/SACD/CD only)
↕
PLAY▶ (normal speed)
↕
×2◀ (DVD VIDEO only)
↕
FR1◀◀ Fast rewind
↕
FR2◀◀ Fast rewind (faster than FR1◀◀)

If you turn the click shuttle quickly, the playback speed goes to "FF2▶▶" or "FR2◀◀" at once.

During pause mode (DVD VIDEO, DVD-RW only)

SLOW1▮▶ Slow (playback direction)
↕
SLOW2▮▶ Slow (playback direction – slower than SLOW1▮▶)
↕
PAUSE▮▮ Pause
↕
SLOW2◀▮ Slow (opposite direction – slower than SLOW1◀▮) (DVD VIDEO only)
↕
SLOW1◀▮ Slow (opposite direction) (DVD VIDEO only)

continued

During pause mode (VIDEO CD only)

SLOW1▮► Slow (playback direction)
↕
SLOW2▮► Slow (playback direction – slower than SLOW1▮►)
↕
PAUSE▮▮ Pause

To return to Continuous Play

Press ▷.

Playing a disc frame by frame (Jog mode) DVD VIDEO DVD-RW VIDEO CD

1 Press JOG.
"JOG" appears in the LCD screen on the remote. The picture on the screen pauses if you press JOG on the player.

2 Turn the click shuttle.
Depending on the turning speed, playback goes to frame-by-frame playback in the direction that the click shuttle is turned. Turn the click shuttle clockwise to go forward, and counterclockwise to rewind (DVD VIDEO only). If you turn the click shuttle at a constant speed for a while, the playback speed goes to slow or normal.

To return to Continuous Play

Press ▷.

To turn off the Jog mode

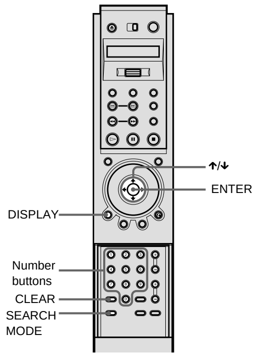
Press JOG again so that "JOG" disappears from the LCD screen. If you press JOG on the player, the indicator turns off.

Notes
- The "JOG" indicator in the LCD on the remote shows the current state of the click shuttle. For example, even if the JOG indicator on the player is lit, the click shuttle on the remote returns to Shuttle mode when "JOG" disappears from the LCD screen.
- If you do not operate the click shuttle for about 20 seconds after pressing JOG, it returns to shuttle mode on the remote. On the player, it stays in jog mode.

Searching for a Title/Chapter/Track/Index/Scene

DVD VIDEO DVD-RW VIDEO CD SACD CD

You can search a DVD by title or chapter, and you can search a VIDEO CD/SACD/CD by track, index, or scene. As titles and tracks are assigned unique numbers on the disc, you can select the desired one by entering its number. Or, you can search for a scene using the time code (Time search).



1 Press DISPLAY.
The Control Menu appears.

2 Press ↑/↓ to select the search method.

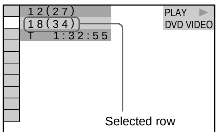
■**When playing a DVD VIDEO/ DVD-RW**
(TITLE), (CHAPTER), (TIME/TEXT), or (TIME/ MEMO)
Select "TIME/TEXT" or "TIME/ MEMO" for "Time search" (see below).

■**When playing a VIDEO CD**
(TRACK) or (INDEX)

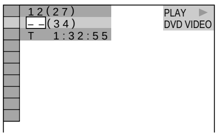
■**When playing a VIDEO CD with PBC Playback**
(SCENE)

■**When playing an SACD/CD**
(TRACK) or (INDEX)

Example: when you select (CHAPTER)
"** (**)" is selected (** refers to a number).
The number in parentheses indicates the total number of titles, chapters, tracks, indexes or scenes.



3 Press ENTER.
"** (**)" changes to "-- (**)."



4 Press ↑/↓ or the number buttons to select the title, chapter, track, index, or scene number you want to search.

If you make a mistake
Cancel the number by pressing CLEAR, then select another number.

5 Press ENTER.
The player starts playback from the selected number.

To turn off the Control Menu

Press DISPLAY repeatedly until the Control Menu is turned off.

To search for a scene using the time code (Time search) (DVD VIDEO/DVD-RW only)

1 In Step 2, select (TIME/ TEXT) or (TIME/MEMO).
"T **:**:**" (playing time of the current title) is selected.

2 Press ENTER.
"T **:**:**" changes to "T --:--:--."

3 Input the time code using the number buttons, then press ENTER.
For example, to find the scene at 2 hours, 10 minutes, and 20 seconds after the beginning, just enter "2:10:20."

💡 You can select "TITLE," "CHAPTER," "TRACK," "INDEX," "SCENE," or "TIME/TEXT" directly by pressing SEARCH MODE repeatedly.

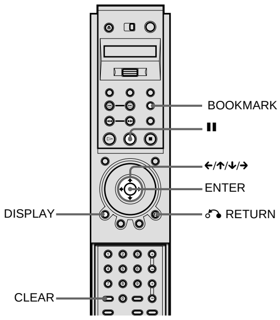
💡 When the Control Menu display is turned off, you can search for a chapter (DVD VIDEO/DVD-RW) or track (SACD/CD) by pressing the number buttons and ENTER.

💡 You can display the first scene of titles, chapters, or tracks recorded on the disc on a screen divided into 9 sections. You can start playback directly by selecting one of the scenes. For details, see below.

Notes
- The title, chapter or track number displayed is the same number recorded on the disc.
- You cannot search for a still picture on a DVD-RW in VR mode.

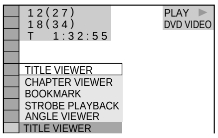
Searching by Scene (VIEWER)

You can divide the screen into 9 subscreens and find the desired scene quickly.



1 Press DISPLAY twice during playback.
The Control Menu appears.

2 Press ↑/↓ to select (VIEWER), then press ENTER.
The options for "VIEWER" appear.



3 Press ↑/↓ to select the item.
Refer to the explanations given for each item in the following sections.
- TITLE VIEWER (for DVD VIDEO only)
- CHAPTER VIEWER (for DVD VIDEO only)
- BOOKMARK
- TRACK VIEWER (for VIDEO CD only)
- STROBE PLAYBACK
- ANGLE VIEWER (for DVD VIDEO only)

4 Press ENTER.

To start playback from the selected scene or angle

Select the scene using ←/↑/↓/→ and press ENTER. The playback starts from the selected scene or angle.

To return to normal play

Press ↶ RETURN.

To turn off the Control Menu

Press DISPLAY repeatedly until the Control Menu is turned off.

Notes
- Depending on the disc, you may not be able to select all functions.
- The sound is muted when using this function.

Scanning the title, chapter, or track DVD VIDEO VIDEO CD

You can divide the screen into 9 subscreens and display the first scene of titles, chapters, or tracks. You can also play back from the selected title, chapter, or track.

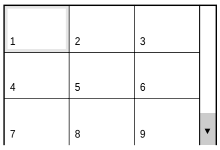
Select the item you want in Step 3, then press ENTER in Step 4.

■**When playing a DVD VIDEO**
Select "TITLE VIEWER" or "CHAPTER VIEWER".

■**When playing a VIDEO CD**
Select "TRACK VIEWER".

The initial scenes of titles, chapters, or tracks appear.

💡 If there are more than 9 titles, chapters, or tracks, ▼ is displayed at the bottom right.
To display the additional titles, chapters, or tracks, select the bottom right scene (the position 9) and press ↓. To return to the previous scene, select the top left scene (the position 1) and press ↑.



Setting and selecting a favorite scene (Bookmark) DVD VIDEO VIDEO CD

You can have the player store specific portions of the disc in memory and play them immediately whenever you want (Bookmark). Up to 9 bookmarks per disc for a total of 200 discs can be stored in memory.

Select "BOOKMARK" in Step 3, then press ENTER in Step 4.
The bookmarked scenes are displayed on a screen divided into 9 sections.

To set a bookmark

During playback, press BOOKMARK when you find a scene to be bookmarked.

To start playback from the bookmarked scene

Select the bookmark using ←/↑/↓/→, then press ENTER.

To reset the bookmark

Select the bookmark you want to reset using ←/↑/↓/→, then press CLEAR.

To reset all the bookmarks for the player

Select "BOOKMARK RESET →" of "CUSTOM SETUP" in the Setup Display (page 86).

💡 The number of the bookmark you selected is displayed on the front panel display.

Notes
- The player can store the bookmarks of up to 200 discs in memory. When you have the player store over 200 discs in memory, bookmarks of the oldest disc are erased.
- Do not turn off the player by pressing POWER during playback. Doing so may erase the bookmarks previously stored in memory.

Dividing a scene into 9 sections (STROBE PLAYBACK) DVD VIDEO VIDEO CD

You can display 9 consecutive moving pictures on the screen. When you press ▮▮, the moving pictures pause.

Select "STROBE PLAYBACK" in Step 3, then press ENTER in Step 4.

Displaying different angles simultaneously DVD VIDEO

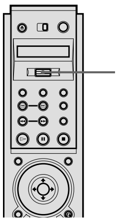
If various angles (multi-angles) for a scene are recorded on the DVD VIDEO, you can display all of the angles recorded on the disc on the same screen. The angles are displayed on a screen divided into 9 sections.

Select "ANGLE VIEWER" in Step 3, then press ENTER in Step 4.

Viewing the Playing Time and Remaining Time on the Front Panel Display

DVD VIDEO DVD-RW VIDEO CD SACD CD

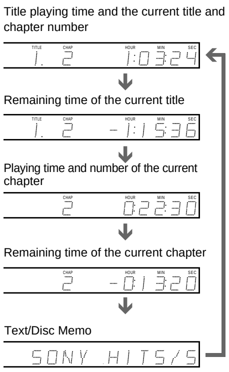
You can check information about the disc, such as the remaining time, current title number, or track using the front panel display (page 9).



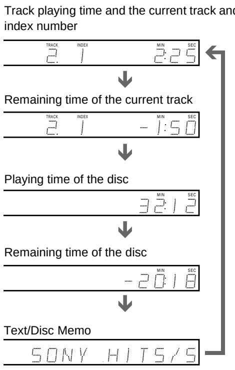
1 Toggle the scroll key up or down so that "TIME/TEXT" appears in the LCD screen.

2 Press down on the scroll key repeatedly.
Each time you press down on the scroll key, the display changes as shown in the following charts.

When playing a DVD VIDEO or DVD-RW



When playing a VIDEO CD (without PBC functions), SACD, or CD



💡 When playing VIDEO CDs with PBC functions, the scene number and the playing time are displayed.

💡 The playing time and remaining time of the current chapter, title, track, scene, or disc will also appear on your TV screen. See the following section "Checking the Playing Time and Remaining Time" for instructions on how to read this information.

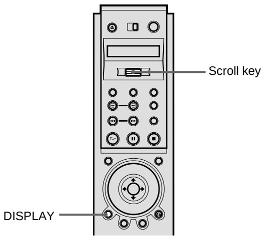
💡 The DVD/SACD/CD text or Disc Memo may also appear on your TV screen. See "Labeling the disc" (page 71) for more information.

Note
Depending on the type of disc being played and the playing mode, the above mentioned disc information may not be displayed.

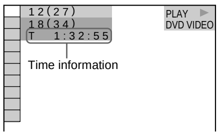
Checking the Playing Time and Remaining Time

DVD VIDEO DVD-RW VIDEO CD SACD CD

You can check the playing time and remaining time of the current title, chapter, or track, in addition to the playing time and remaining time of the disc. Also, you can check the Disc Memo or DVD/SACD/CD text recorded on the disc.



1 Press DISPLAY during playback.
The Control Menu appears.



2 Toggle the scroll key up or down so that "TIME/TEXT" appears in the LCD screen.

continued

3 Press down on the scroll key repeatedly to change the time information.
The display and the kinds of time that you can change depend on the disc you are playing.

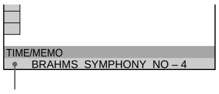
■**When playing a DVD VIDEO or DVD-RW**
- T **:**:**
  Playing time of the current title
- T–**:**:**
  Remaining time of the current title
- C **:**:**
  Playing time of the current chapter
- C–**:**:**
  Remaining time of the current chapter

■**When playing a VIDEO CD (with PBC functions)**
- **:**
  Playing time of the current scene

■**When playing a VIDEO CD (without PBC functions), SACD, or CD**
- T **:**
  Playing time of the current track
- T–**:**
  Remaining time of the current track
- D **:**
  Playing time of the current disc
- D–**:**
  Remaining time of the current disc

To turn off the Control Menu
Press DISPLAY repeatedly until the Control Menu is turned off.

To check the Disc Memo or text
Press down on the scroll key repeatedly in Step 3 to display the Disc Memo or text recorded on the DVD/SACD/CD. The DVD/SACD/CD text appears only when text is recorded in the disc. If the disc does not contain text, "NO TEXT" appears. In this case, you can label the disc. To label the disc, see page 71.



Disc Memo or DVD/SACD/CD text

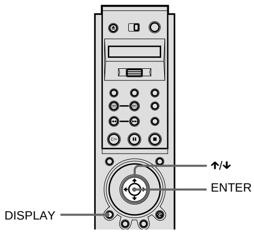
💡 You can see the entire DVD/SACD/CD text or Disc Memo by watching it scroll across the front panel display.

Notes
- The player can only display the first level of the DVD/SACD/CD text, such as the disc name or title.
- Depending upon the disc, the text may not be displayed.

Checking the Play Information (ADVANCED)

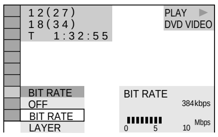
DVD VIDEO DVD-RW

You can check information such as the bit rate or the disc layer that is being played. While playing a disc, an approximate bit rate of the playback picture is always displayed as Mbps (Mega bit per second) and the audio as kbps (kilo bit per second).



1 Press DISPLAY during playback.
The Control Menu is displayed.

2 Press ↑/↓ to select (ADVANCED), then press ENTER.
The options for "ADVANCED" appear.



3 Press ↑/↓ to select items.
For each item, please refer to "Displays of each item."
- BIT RATE: displays the bit rate.
- LAYER: displays the layer and the pick-up point.

4 Press ENTER.

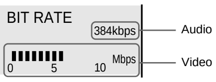
To close the ADVANCED window
Select "OFF" in Step 3.

To turn off the Control Menu
Press DISPLAY repeatedly until the Control Menu is turned off.

Displays of each item

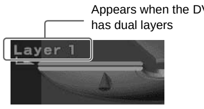
By pressing DISPLAY repeatedly, you can display either "BIT RATE" or "LAYER," whichever was selected in "ADVANCED."

BIT RATE



Bit rate refers to the amount of video/audio data per second in a disc. The higher the bit rate, the larger the amount of data. When the bit rate level is high, there is a large amount of data. However, this does not always mean that you can get higher quality pictures or sounds.

LAYER

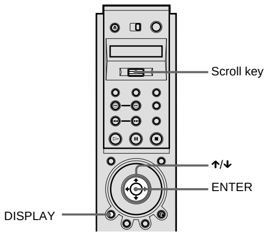


Indicates the approximate point where the disc is playing.
If it is a dual-layer DVD, the player indicates which layer is being read ("Layer 0" or "Layer 1").
For details on the layers, see page 97 (DVD VIDEO).

Changing the Sound

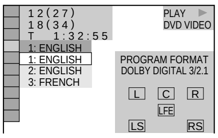
DVD VIDEO DVD-RW VIDEO CD CD

If the DVD VIDEO is recorded with multilingual tracks, you can select the language you want while playing the DVD VIDEO.
When the DVD VIDEO is recorded in multiple audio formats (PCM, Dolby Digital, or DTS), you can select the audio format while playing the DVD VIDEO.
With CDs or VIDEO CDs, you can select the sound from the right or left channel and listen to the sound of the selected channel through both the right and left speakers. (In this case, the sound loses its stereo effect.) For example, when playing a disc containing a song with the vocals on the right channel and the instruments on the left channel, you can hear the instruments from both speakers by selecting the left channel.



1 Press DISPLAY during playback.
The Control Menu is displayed.

2 Press ↑/↓ to select (AUDIO), then ENTER.
The options for "AUDIO" appear.



3 Press ↑/↓ to select the desired audio signal.

■When playing a DVD VIDEO
Depending on the DVD VIDEO, the choice of language varies.
When 4 digits are displayed, they indicate a language code. Refer to "Language Code List" on page 102 to see which language the code represents.
When the same language is displayed two or more times, the DVD VIDEO is recorded in multiple audio formats.

■When playing a DVD-RW
The types of sound tracks recorded on a disc are displayed. The default setting is underlined.
Example:
- 1: MAIN (main sound)
- 1: SUB (sub sound)
- 1: MAIN+SUB (main and sub sound)

■When playing a VIDEO CD or CD
The default setting is underlined.
- STEREO: The standard stereo sound
- 1/L: The sound of the left channel (monaural)
- 2/R: The sound of the right channel (monaural)

4 Press ENTER.

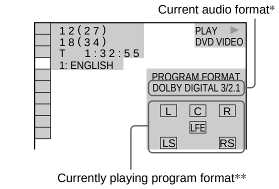
To turn off the Control Menu
Press DISPLAY repeatedly until the Control Menu is turned off.

💡 You can use the LCD and scroll key on the remote to select an audio format. Toggle the scroll key up or down so that "AUDIO" appears in the LCD screen. Then press down on the scroll key repeatedly to select one of the audio options.

Notes
- While playing a DVD, the sound may change automatically.
- You cannot change the sound for SACDs.

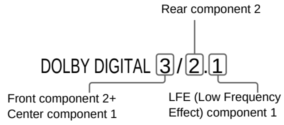
Displaying the audio information of the disc DVD VIDEO

When you select "AUDIO," the channels being played are displayed on the screen.
For example, in Dolby Digital format, multiple signals ranging from monaural to 5.1 channel signals can be recorded on a DVD. Depending on the DVD, the number of the recorded channels may differ.



* "PCM," "DTS," or "DOLBY DIGITAL" is displayed.
In the case of "DOLBY DIGITAL," the channels in the playing track are displayed by numbers as follows:

For Dolby Digital 5.1 ch:

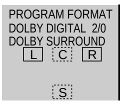


**The letters in the program format display mean the following sound component:
- L: Front (left)
- R: Front (right)
- C: Center
- LS: Rear (left)
- RS: Rear (right)
- S: Rear (monaural): The rear component of the Dolby Surround processed signal and the Dolby Digital signal
- LFE: Low Frequency Effect signal

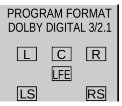
continued

The display examples are as follows:
- PCM (stereo)

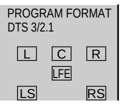
- Dolby Surround



- Dolby Digital 5.1ch
When an LFE signal component is output, "LFE" is enclosed in a solid line. When an LFE signal component is not output, "LFE" is enclosed in a broken line.



- DTS
When an LFE signal component is output, "LFE" is enclosed in a solid line. When an LFE signal component is not output, "LFE" is enclosed in a broken line.

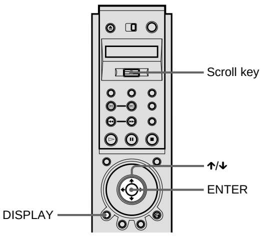


💡 When the signal contains rear signal components such as "LS", "RS", or "S", the surround effect is enhanced (page 60).

SURROUND Mode Settings

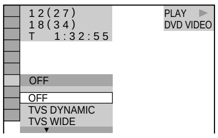
DVD VIDEO DVD-RW VIDEO CD CD

You can enjoy surround sounds while playing discs including Dolby Digital and DTS DVDs, even if you have only 2 or 4 speakers. Select the surround mode that best suits your speaker setup.



1 Press DISPLAY during playback.
The Control Menu appears.

2 Press ↑/↓ to select (SURROUND), then press ENTER.
The options for "SURROUND" appear.



3 Press ↑/↓ to select one of the surround modes.
Refer to the following explanations given for each item.

For 2 speaker setups
- TVS DYNAMIC
- TVS WIDE
- TVS NIGHT
- TVS STANDARD

For 4 to 6 speaker setups
(If you select "NONE" in the setting of "REAR" in "SPEAKER SETUP"(page 91), you cannot select these modes.)
- NORMAL SURROUND
- ENHANCED SURROUND
- VIRTUAL REAR SHIFT
- VIRTUAL MULTI REAR
- VIRTUAL MULTI DIMENSION

4 Press ENTER.

To cancel the setting
Select "OFF" in Step 3.

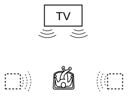
To turn off the Control Menu
Press DISPLAY repeatedly until the Control Menu is turned off.

For 2 speaker setups

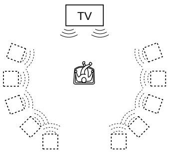
When you connect only 2 front speakers, TVS (TV Virtual Surround) lets you enjoy surround sound effects by using sound imaging to create virtual rear speakers from the sound of the front speakers (L: left, R: right) without using actual rear speakers. Select one of the following modes:

If the player is set up to output the signal from the DIGITAL OUT (OPTICAL or COAXIAL) jack, the surround effect will be heard only when "DOLBY DIGITAL" and "DTS" are set to "D-PCM" in "AUDIO SETUP"(page 89).

TVS DYNAMIC
Uses sound imaging to create virtual rear speakers from the sound of the front speakers (L, R) without using actual rear speakers (shown below). The sound imaging effect is distinct and clearly reproduces each aural element of the audio track.
This mode is effective when the distance between the front L and R speakers is short, such as with built-in speakers on a stereo TV.



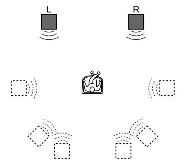
TVS WIDE
Uses sound imaging to create virtual rear speakers from the sound of the front speakers (L, R) without using actual rear speakers. The virtual speakers are reproduced as shown in the illustration below. This gives the sound an expanded effect that fills the area surrounding the listener.
This mode is effective when the distance between the front L and R speakers is short, such as with built-in speakers on a stereo TV.



TVS NIGHT
Large sounds, such as explosions, are compressed, but the quieter sounds are unaffected. This feature is useful when you don't want to disturb other people but still want to hear the dialog and enjoy the surround sound effects of "TVS WIDE."

continued

TVS STANDARD
Uses sound imaging to create virtual rear speakers from the sound of the front speakers (L, R) without using actual rear speakers. The virtual speakers are reproduced as shown in the illustration below. Use this setting when you want to use TVS with 2 separate speakers and retain the sound quality.

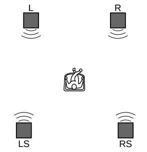


L : Front speaker (left)
R : Front speaker (right)
□ : Virtual speaker

For 4 to 6 speaker setups

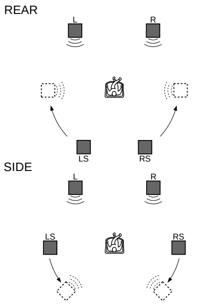
You can enjoy the following surround effects by using the 2 front speakers and 2 rear speakers.
Connect the player to the amplifier (receiver) with the B-1 connection (page 25).
You can experience Dolby Surround (Pro Logic) sounds or Digital Cinema Sound (DCS). DCS uses sound imaging to shift the sound of the rear speakers away from the actual speaker position or create entire sets of virtual rear speakers from one set of actual rear speakers. "VIRTUAL REAR SHIFT," "VIRTUAL MULTI REAR," and "VIRTUAL MULTI DIMENSION" make use of this technology.

NORMAL SURROUND
Software with 2 channel audio signals is decoded with the Dolby Surround (Pro Logic) decoder to create surround effects. The rear speakers will emit identical monaural sounds. If you are using a center speaker, the appropriate sounds for the center speaker will be delivered.

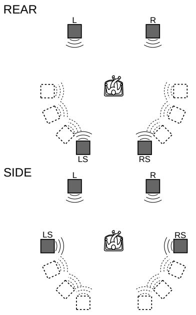


ENHANCED SURROUND
Provides a greater sense of presence from a Dolby Surround (Pro Logic) source with a monaural rear channel signal. Produces a stereo like effect in the rear channels.

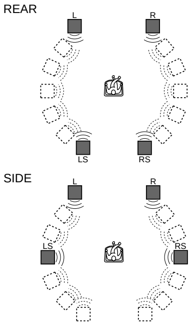
VIRTUAL REAR SHIFT
Uses sound imaging to shift the sound of the rear speakers away from the actual speaker position.
The virtual speakers are reproduced as shown in the illustration below. The shift position differs according to "REAR" or "SIDE" setting of the rear speakers (page 91).



VIRTUAL MULTI REAR
Uses sound imaging to create an array of virtual rear speakers from a single pair of actual rear speakers. The virtual speakers are reproduced as shown in the illustration below. The position of the virtual rear speakers differs according to "REAR" or "SIDE" setting of the rear speakers (page 91).



VIRTUAL MULTI DIMENSION
Uses sound imaging to create an array of virtual rear speaker positions higher than the listener from a single pair of actual rear speakers.
This mode creates five sets of virtual speakers surrounding the listener at approximately a 30° angle of elevation. The effect differs according to "REAR" or "SIDE" setting of the rear speakers (page 91).



L : Front speaker (left)
R : Front speaker (right)
LS : Rear speaker (left)
RS : Rear speaker (right)
□ : Virtual speaker

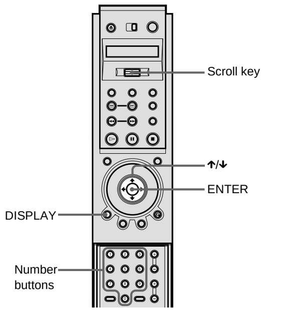
💡 You can use the LCD and scroll key on the remote to select a surround setting. Toggle the scroll key up or down so that "SURROUND" appears in the LCD screen. Then press down on the scroll key repeatedly to select one of the surround sounds.

Notes
- To enjoy the multichannel audio through the 5.1CH OUTPUT jacks, correctly set each speaker position and distance. For details on setting each speaker, see page 91.
- When you select an item, the sound cuts off for a moment.
- When the playing signal does not contain a signal for the rear speakers (page 59), the surround effects may be difficult to hear.
- When you select "TVS DYNAMIC," "TVS WIDE," "TVS NIGHT", or "TVS STANDARD," the player does not output the sound from the center speaker.
- When you select one of the surround modes, turn off the surround setting of the connected TV or amplifier (receiver).
- If the player is set up to output the signal from the DIGITAL OUT (OPTICAL or COAXIAL) jack, the TVS effect will not be heard when you play a CD.
- Make sure that your listening position is between and at an equal distance from your speakers, and that the speakers are located in similar surroundings. Otherwise, the TVS effect may be hard to discern.
- "TVS NIGHT" only works with Dolby Digital discs. However, not all discs will respond to the "TVS NIGHT" function in the same way.
- If you use the DIGITAL OUT (OPTICAL or COAXIAL) jack and set "DOLBY DIGITAL" to "DOLBY DIGITAL," "DTS" to "DTS" in "AUDIO SETUP," sound will come from your speakers but it will not have the TVS effect.

Changing the Angles

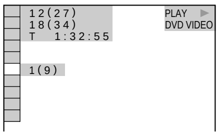
DVD VIDEO

If various angles (multi-angles) for a scene are recorded on the DVD VIDEO, "ANGLE" appears in the front panel display. This means that you can change the viewing angle.
For example, while playing a scene of a train in motion, you can display the view from either the front of the train, the left window of the train or from the right window without having the train's movement interrupted.

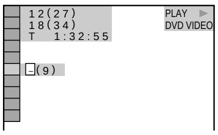


1 Press DISPLAY during playback.
The Control Menu appears.

2 Press ↑/↓ to select (ANGLE).
The number of the angle appears.
The number in parentheses indicates the total number of angles.



3 Press → or ENTER.
The number of the angle changes to "-."



4 Select the angle number using the number buttons or ↑/↓, then press ENTER.
The angle changes to the selected angle.

To turn off the Control Menu
Press DISPLAY repeatedly until the Control Menu is turned off.

💡 You can use the LCD and scroll key on the remote to select an angle. Toggle the scroll key up or down so that "ANGLE" appears in the LCD screen. Then press down on the scroll key repeatedly to select an angle.

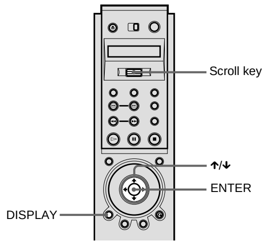
💡 You can display all the angles recorded on the disc on the same screen, and start playback directly in continuous mode from the chosen angle. The angles are displayed on a screen divided into 9 sections. For details, see page 52.

Note
Depending on the DVD VIDEO, you may not be able to change the angles even if multi-angles are recorded on the DVD VIDEO.

Displaying the Subtitles

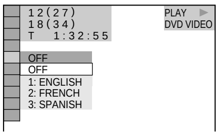
DVD VIDEO DVD-RW

If subtitles are recorded on the discs, you can turn the subtitles on and off whenever you want while playing. If multilingual subtitles are recorded on the disc, you can change the subtitle language while playing, and turn it on or off whenever you want. For example, you can select the language you want to practice and turn the subtitles on for better understanding.



1 Press DISPLAY during playback.
The Control Menu appears.

2 Press ↑/↓ to select (SUBTITLE), then press ENTER.
The options for "SUBTITLE" appear.



3 Press ↑/↓ to select the setting.

■When playing a DVD VIDEO
Select the language.
Depending on the DVD VIDEO, the choice of language varies.
When 4 digits are displayed, they indicate a language code. Refer to "Language Code List" on page 102 to see which language the code represents.

■When playing a DVD-RW
Select "ON."

4 Press ENTER.

To cancel the SUBTITLE setting
Select "OFF" in Step 3.

To turn off the Control Menu
Press DISPLAY repeatedly until the Control Menu is turned off.

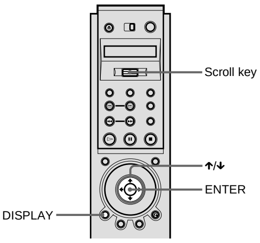
💡 You can use the LCD and scroll key on the remote to select a subtitle. Toggle the scroll key up or down so that "SUBTITLE" appears in the LCD screen. Then press down on the scroll key repeatedly to select a setting.

Note
Depending on the DVD VIDEO, you may not be able to change the subtitles even if multilingual subtitles are recorded on it.

Adjusting the Picture Quality (BNR)

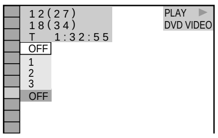
DVD VIDEO **DVD-RW** **VIDEO CD**

The Block Noise Reduction (BNR) function adjusts the picture quality by reducing the "block noise" or mosaic like patterns that appear on your TV screen.



1 Press DISPLAY twice during playback.
The Control Menu appears.

2 Press ↑/↓ to select [BNR] (BNR), then press ENTER.
The options for "BNR" appear.



3 Press ↑/↓ to select a level.
As the value increases, the mosaic like patterns on your TV screen will decrease.
- 1: reduces the "block noise".
- 2: reduces the "block noise" more than 1.
- 3: reduces the "block noise" more than 2.

4 Press ENTER.
The disc plays with the setting you selected.

To cancel the "BNR" setting

Select "OFF" in Step 3.

To turn off the Control Menu

Press DISPLAY repeatedly until the Control Menu is turned off.

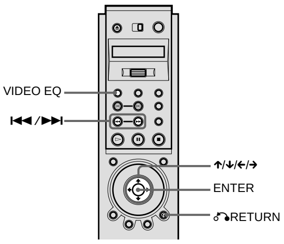
💡 You can use the LCD and scroll key on the remote to select "BNR." Toggle the scroll key up or down so that "BNR" appears in the LCD screen. Then press down on the scroll key repeatedly to select a level.

Notes
- If the outlines of the images on your screen should become blurred, set "BNR" to "OFF."
- Depending on the disc or the scene being played, the "BNR" effect may be hard to discern.

Adjusting the Playback Picture (VIDEO EQUALIZER)

DVD VIDEO **DVD-RW** **VIDEO CD**

You can adjust the video signal of the DVD or VIDEO CD from the player, not from the TV, to obtain the picture quality you want. Choose the setting that best suits the program you are watching.
When you select "MEMORY," you can make further adjustments to each element of the picture (color, brightness, etc.).



1 Press VIDEO EQ.
"STANDARD" appears on the TV screen.

2 Press VIDEO EQ repeatedly to select the setting you want.
- STANDARD: displays a standard picture.
- DYNAMIC 1: produces a bold dynamic picture by increasing the picture contrast and the color intensity.
- DYNAMIC 2: produces a more dynamic picture than DYNAMIC 1 by further increasing the picture contrast and the color intensity.
- CINEMA 1: enhances details in dark areas by increasing the black level.
- CINEMA 2: White colors become brighter and black colors become richer, and the color contrast is increased.
- MEMORY: adjusts the picture in greater detail.

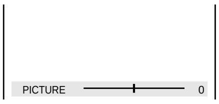
💡 When you watch a movie, "CINEMA 1" or "CINEMA 2" is recommended.

💡 You can also select "VIDEO EQUALIZER" from the Control Menu.

Adjusting the picture items in "MEMORY"

You can adjust each element of the picture individually.
- PICTURE: changes the contrast
- BRIGHTNESS: changes the overall brightness
- COLOR: makes the colors deeper or lighter
- HUE: changes the color balance
- GAMMA: adjusts washed out or darkened areas of an image

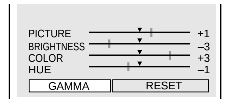
1 Press VIDEO EQ repeatedly to select "MEMORY" and press ENTER.
The "PICTURE" adjustment bar appears.



continued

2 Press ←/→ to adjust the picture contrast, then press ENTER.
The adjustment is saved, and "BRIGHTNESS" adjustment bar appears.
Press ↑/↓ to go to another adjustment display.

3 Repeat Step 2 to adjust "BRIGHTNESS," "COLOR," and "HUE."
The Video Equalizer display appears. You can check each adjustment. For "GAMMA" adjustment, see "Adjusting the brightness of selected areas (Gamma Correction)" below.



To turn off the Video Equalizer display

Press RETURN.

💡 To reset the picture items to the default values, press → after Step 3 to select "RESET" and press ENTER.

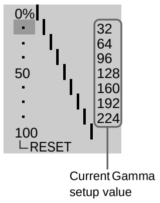
💡 When "PLAYBACK MEMORY" in "CUSTOM SETUP" is set to "ON," the player will save a single setting for up to 200 individual discs. (This does not apply to DVD-RWs in VR mode.)

Adjusting the brightness of selected areas (Gamma Correction)

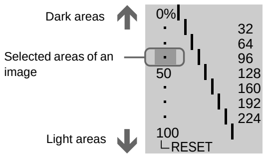
Depending on your TV or viewing environment, images on the screen may lose definition when a certain area of the image is so light that it appears washed out, or so dark that it blends into the surrounding dark areas. By correcting the Gamma value, you can adjust the brightness of selected areas to get a clearer image. While the "BRIGHTNESS" adjustment controls the brightness of the entire image, the "GAMMA" adjustment is useful when only some portions of the image need adjusting.

Example: You are watching a movie that is rich in shadows and you want to see the hidden details of the scenery.
If you use "BRIGHTNESS" adjustment, the entire image will become brighter, losing definition of the areas that were initially bright. The "GAMMA" adjustment enables you to gradually increase the brightness of only the darkest areas of the image without sacrificing the definition of the entire image.

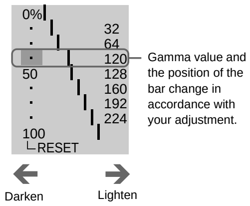
1 After Step 3 of "Adjusting the picture items in MEMORY," press ↑/↓ to select "GAMMA," and press ENTER.
The "GAMMA" adjustment display appears.



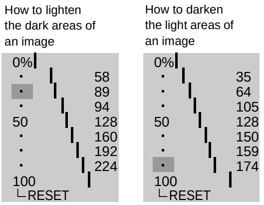
2 Press ↑/↓ to select areas of an image.
The upper region adjusts the dark areas and the lower region adjusts the light areas.



3 Press ←/→ to adjust the brightness level of the area that you selected.
← decreases the level (darkens the area), and → increases the level (lightens the area). The level can be adjusted between 16 and 235. The level for the dark areas can never be greater than the light areas.



4 Repeat Steps 2 and 3 to adjust the brightness level of other areas that you select.
Try to keep the line that connects the brightness level of each area as smooth and straight as possible, as shown below.



To prevent the image from appearing overly altered, do not give the line any sharp changes. Gradually make the adjustments while viewing the image on your TV screen.
Press RETURN to stop making adjustments to the image.

5 Press ENTER.
The Video Equalizer display appears and the adjusted gamma values are stored in memory.

To reset only the gamma value to the default setting

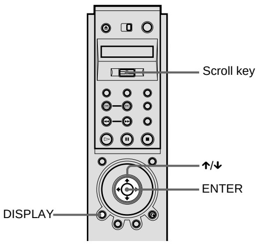
Select "RESET" in the "GAMMA" adjustment display by pressing ↑/↓ and press ENTER.

💡 You can move the gamma adjustment display horizontally by pressing |◀◀/▶▶|.

Enhancing the Playback Picture (DIGITAL VIDEO ENHANCER)

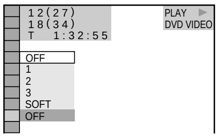
DVD VIDEO DVD-RW VIDEO CD

The Digital Video Enhancer function makes the picture appear clear and crisp by enhancing the outlines of images on your TV screen. Also, this function can soften the images on the screen.



1 Press DISPLAY twice during playback.
The Control Menu appears.

2 Press ↑/↓ to select (DIGITAL VIDEO ENHANCER), then press ENTER.
The options for "DIGITAL VIDEO ENHANCER" appear.



3 Press ↑/↓ to select a level.
As the value increases, the outlines of images on your TV screen will become crisper.
- 1: enhances the outline.
- 2: enhances the outline more than 1.
- 3: enhances the outline more than 2.
- SOFT: softens the image (DVD VIDEO/DVD-RW only).

4 Press ENTER.
The disc plays with the setting you selected.

To cancel the "DIGITAL VIDEO ENHANCER" setting
Select "OFF" in Step 3.

To turn off the Control Menu
Press DISPLAY repeatedly until the Control Menu is turned off.

💡 You can use the LCD and scroll key on the remote to select "DIGITAL VIDEO ENHANCER." Toggle the scroll key up or down so that "DVE" appears in the LCD screen. Then press down on the scroll key repeatedly to select a level.

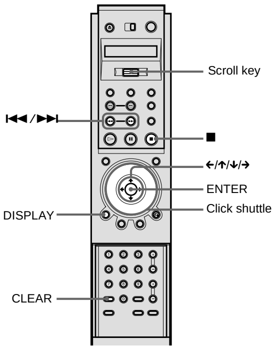
Note

Depending on the DVD/VIDEO CD disc or the scene being played, noise found in the disc may become more apparent. If this happens, it is recommended that you use the BNR function (page 66) with the DVE function. If the condition still does not improve, reduce the Digital Video Enhancer level, or select "SOFT" (DVD VIDEO/DVD-RW only) in Step 3 above.

Labeling the Disc

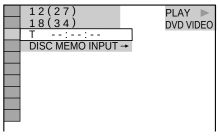
DVD VIDEO VIDEO CD SACD CD

You can label the disc if text is not recorded on the disc (Disc Memo).
You can put a personal title of up to 20 characters on the disc. The Disc Memo can be anything you like, such as a title, musician's name, category, or date of purchase.

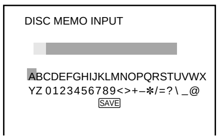


1 Press DISPLAY during playback.
The Control Menu appears.

2 Press ↑/↓ to select (TIME/MEMO) and press ENTER.
"DISC MEMO INPUT →" appears.

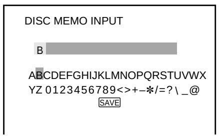


3 Press ↓ to select "DISC MEMO INPUT →" and press ENTER.
The "DISC MEMO INPUT" display appears.



4 Select a character by pressing ←/↑/↓/→ or turning the click shuttle.
The selected character changes the color.

5 Press ENTER.



6 Repeat Steps 4 and 5 to input other characters.

7 When you have entered all the characters for a Disc Memo, select "SAVE" by pressing ←/↑/↓/→ and press ENTER.
The Disc Memo is stored.

continued

To turn off the Control Menu
Press DISPLAY repeatedly until the Control Menu is turned off.

To erase a character
1. Press ⏮ or ⏭ to move the cursor to the character you want to erase.
2. Press CLEAR.

To insert or overwrite a character
1. Press ⏮ or ⏭ to move the cursor to the character you want to insert or correct.
2. Select a correct character by pressing ←/↑/↓/→ or turning the click shuttle.
3. To insert the character, press ENTER. To overwrite, do not press ENTER but move the cursor by pressing ⏮ or ⏭.

To check the Disc Memo
Toggle the scroll key up or down to display "TIME/TEXT" in the LCD screen on the remote. Then press down on the scroll key repeatedly until the Disc Memo appears at the bottom of the screen.

Notes

- During playback, do not turn off the player by pressing POWER on the player. Doing so may cancel the settings. When you turn off the player, press ■ first to stop playback and then press I/⏻ on the remote. After the power indicator lights up in red and the player enters standby mode, press POWER on the player.
- You can label up to 200 discs. When you have the player store over 200 discs in memory, each new Disc Memo erases the oldest Disc Memo from those first stored.

Locking Discs (CUSTOM PARENTAL CONTROL, PARENTAL CONTROL)

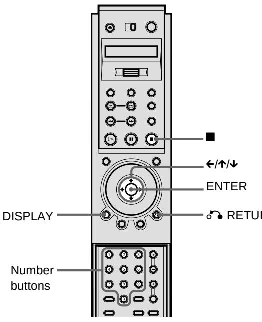
You can set two kinds of playback restrictions for the desired disc.
- Custom Parental Control
  You can set the playback restrictions so that the player will not play inappropriate discs.
- Parental Control
  Playback of some DVD VIDEOs can be limited according to a predetermined level such as the age of the users.

The same password is used for both Parental Control and Custom Parental Control.

Custom Parental Control

DVD VIDEO VIDEO CD SACD CD

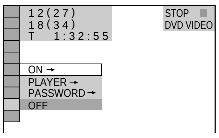
You can set the same Custom Parental Control password for up to 200 discs. When you set the 201st-disc, the first disc is canceled.



1 Insert the disc you want to lock.
If the disc is playing, press ■ to stop playback.

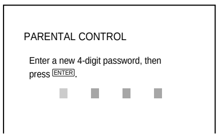
2 Press DISPLAY while the player is in stop mode.
The Control Menu appears.

3 Press ↑/↓ to select (PARENTAL CONTROL), then press ENTER.
The options for "PARENTAL CONTROL" appear.



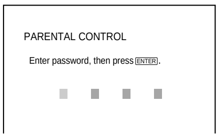
4 Press ↑/↓ to select "ON →," then press ENTER.

■ If you have not entered a password
The display for registering a new password appears.



Enter a 4-digit password by using the number buttons, then press ENTER.
The display for confirming the password appears.

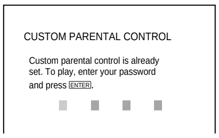
■ When you have already registered a password
The display for entering the password appears.



5 Enter or re-enter your 4-digit password by using the number buttons, then press ENTER.
"Custom parental control is set." appears and then the screen returns to the Control Menu display.

To turn off the Custom Parental Control function
1. Follow Steps 1 through 3 of "Custom Parental Control."
2. Press ↑/↓ to select "OFF →," then press ENTER.
3. Enter your 4-digit password using the number buttons, then press ENTER.

To play a disc for which Custom Parental Control is set
1. Insert the disc for which Custom Parental Control is set.
   The "CUSTOM PARENTAL CONTROL" display appears.



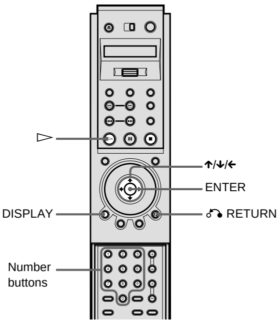
2. Enter your 4-digit password using the number buttons, then press ENTER.
   The player is ready for playback.

💡 If you forget your password, enter the 6-digit number "199703" using the number buttons when the "CUSTOM PARENTAL CONTROL" display asks you for your password, then press ENTER. The display will ask you to enter a new 4-digit password.

continued

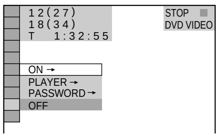
Parental Control (limiting playback by children) DVD VIDEO

Playback of some DVD VIDEOs can be limited according to a predetermined level such as the age of the users. The "PARENTAL CONTROL" function allows you to set a playback limitation level.
A scene that is limited is not played, or it is replaced by a different scene.



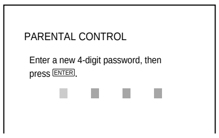
1 Press DISPLAY while the player is in stop mode.
The Control Menu appears.

2 Press ↑/↓ to select (PARENTAL CONTROL), then press ENTER.
The options for "PARENTAL CONTROL" appear.



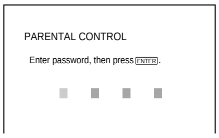
3 Press ↑/↓ to select "PLAYER →," then press ENTER.

■If you have not entered a password
The display for registering a new password appears.

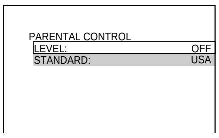


Enter a 4-digit password using the number buttons, then press ENTER.
The display for confirming the password appears.

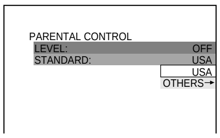
■When you have already registered a password
The display for entering the password appears.



4 Enter or re-enter your 4-digit password by using the number buttons, then press ENTER.
The display for setting the playback limitation level appears.

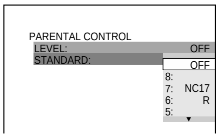


5 Press ↑/↓ to select "STANDARD," then press ENTER.
The selection items for "STANDARD" are displayed.

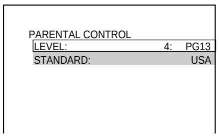


6 Press ↑/↓ to select a geographic area as the playback limitation level, then press ENTER.
The area is selected.
When you select "OTHERS →," select and enter a standard code in the table on page 76 using the number buttons.

7 Press ↑/↓ to select "LEVEL," then press ENTER.
The selection items for "LEVEL" are displayed.



8 Select the level you want using ↑/↓, then press ENTER.
Parental Control setting is complete.



The lower the value, the stricter the limitation.

To turn off the Parental Control function
Set "LEVEL" to "OFF" in Step 8.

To play a disc for which Parental Control is set

1 Insert the disc and press ⊳.
The "PARENTAL CONTROL" display appears.

2 Enter your 4-digit password using the number buttons, then press ENTER.
The player starts playback.

If you forget your password, remove the disc and repeat Steps 1 to 3 of "Parental Control (limiting playback by children)." When you are asked to enter your password, enter "199703" using the number buttons, then press ENTER. The display will ask you to enter a new 4-digit password. After you enter a new 4-digit password in Step 4, replace the disc in the player and press ⊳. When the "PARENTAL CONTROL" display appears, enter your new password.

Notes
- When you play DVD VIDEOs which do not have the Parental Control function, playback cannot be limited on this player.
- Depending on the DVD VIDEO, you may be asked to change the parental control level while playing the disc. In this case, enter your password, then change the level. If the Resume Play mode is canceled, the level returns to the original level.

continued

Area Code

Standard	Code number	Standard	Code number
Argentina	2044	Korea	2304
Australia	2047	Malaysia	2363
Austria	2046	Mexico	2362
Belgium	2057	Netherlands	2376
Brazil	2070	New Zealand	2390
Canada	2079	Norway	2379
Chile	2090	Pakistan	2427
China	2092	Philippines	2424
Denmark	2115	Portugal	2436
Finland	2165	Russia	2489
France	2174	Singapore	2501
Germany	2109	Spain	2149
Hong Kong	2219	Sweden	2499
India	2248	Switzerland	2086
Indonesia	2238	Taiwan	2543
Italy	2254	Thailand	2528
Japan	2276	United Kingdom	2184

Changing the password
DVD VIDEO VIDEO CD SACD CD

1 Press DISPLAY while the player is in stop mode.
The Control Menu appears.

2 Press ↑/↓ to select (PARENTAL CONTROL), then press ENTER.
The options for "PARENTAL CONTROL" appear.

3 Press ↑/↓ to select "PASSWORD →," then press ENTER.
The display for entering the password appears.

4 Enter your 4-digit password using the number buttons, then press ENTER.

5 Enter a new 4-digit password using the number buttons, then press ENTER.

6 To confirm your password, re-enter it using the number buttons, then press ENTER.

If you make a mistake entering your password
Press ← before you press ENTER in Step 5 and input the correct number.

If you make a mistake
Press RETURN.

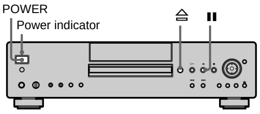
To turn off the Control Menu
Press DISPLAY repeatedly until the Control Menu is turned off.

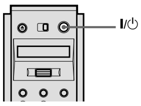
Operation Sound Effects
(Sound Feedback)

The player beeps when the following operations are performed.
The default setting of the Sound Feedback function is set to off.

Operation	Operation sound
Power is turned on	One beep
Power is turned off	Two beeps
⊳ is pressed	One beep
❚❚ is pressed	Two beeps
Playback is stopped	One long beep
Operation is not possible	Three beeps

Setting Sound Feedback





1 Press POWER on the player, then press I/⏻ on the remote.
The power indicator lights up in green.
When there is a disc in the player, press ≜ and remove the disc. Then press ≜ again to close the disc tray.

2 Press and hold ❚❚ on the player for more than two seconds.
You will hear one beep and the Sound Feedback function is turned on.

To turn off the Sound Feedback function
When there is no disc in the player, press and hold ❚❚ on the player for more than two seconds. You will hear two beeps and the Sound Feedback function is turned off.

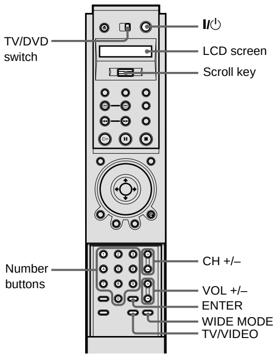
Controlling Your TV or AV Amplifier (Receiver) with the Supplied Remote

By adjusting the remote signal, you can control your TV with the supplied remote. If you connect the player with an AV amplifier (receiver), you can control the volume with the supplied remote.

Notes

- Depending on the units being connected, you may not be able to control your TV or AV amplifier (receiver) using some of the buttons below.
- If you enter a new code number, the code number previously entered will be erased.
- When you replace the batteries of the remote, the code number you have set may be reset to the default setting. Set the appropriate code number again.

Controlling TVs with the remote



1 Slide the TV/DVD switch to TV.

2 While holding down I/⏻, press down on the scroll key.
"TV P-1" appears in the LCD screen.

3 Release I/⏻.

4 Toggle the scroll key up or down to select your TV's manufacturer's code (see the table below).

5 Press down on the scroll key.
The manufacturer's code flashes and the remote is set.

Code numbers of controllable TVs

If more than one code number is listed, try entering them one at a time until you find the one that works with your TV.

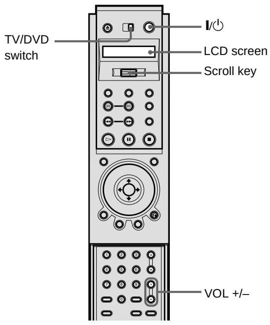
Manufacturer	Code number	Manufacturer	Code number
Sony (default)	1	Panasonic	6,19
Akai	4	Philco	3,4
AOC	4	Philips	8,21
Centurion	12	Pioneer	16
Coronado	3	Portland	3
Curtis-Mathes	12	Quasar	6,18
Daytron	12	Radio Shack	5,14
Emerson	3,4,14	RCA	4,10
Fisher	11	Sampo	12
General Electric	6,10	Samsung	20
Gold Star	3,4,17	Sanyo	11
Hitachi	2,3	Scott	12
J.C.Penney	4,12	Sears	7,10,11
JVC	9	Sharp	3,5,18
KMC	3	Sylvania	8,12
Magnavox	3,8,12	Teknika	3,8,14
Marantz	4,13	Toshiba	7
MGA/ Mitsubishi	4,12,13, 17	Wards	3,4,12
		Yorx	12
NEC	4,12	Zenith	15

Controlling the TV

When you set the TV/DVD switch to TV, you can control the following items with the supplied remote.

By pressing	You can
I/⏻	Turn the TV on or off
VOL +/–	Adjust the volume of the TV
WIDE MODE	Switch to or from the wide mode of a Sony wide TV
TV/VIDEO	Switch the TV's input source between the TV and other input sources
CH +/–, number buttons, and ENTER	Select the channel of the TV

Controlling the volume of your AV amplifier (receiver) with the remote



1 Slide the TV/DVD switch to DVD.

2 While holding down I/⏻, press down on the scroll key.
"AV P-90" appears in the LCD screen.

3 Release I/⏻.

4 Toggle the scroll key up or down to select your AV amplifier (receiver's) manufacturer's code (see the table below).

5 Press down on the scroll key.
The manufacturer's code flashes and the remote is set.

Code numbers of controllable AV amplifiers (receivers)

If more than one code number is listed, try entering them one at a time until you find the one that works with your AV amplifier (receiver).
If you do not connect an AV amplifier (receiver), you can control your TV's volume by setting the code number to 90 (default). However, you must first set the code number of controllable TVs as explained above.

Manufacturer	Code number
Sony	80, 88, 89, 91
Denon	84, 85, 86
Kenwood	92, 93
Onkyo	81, 82, 83
Pioneer	99
Sansui	87
Technics	97, 98
Yamaha	94, 95, 96

Controlling the AV amplifiers (receivers)

When you set the TV/DVD switch to DVD, you can control the volume of the AV amplifier (receiver) using VOL +/–.

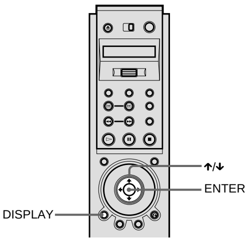
Using the Setup Display

By using the Setup Display, you can make various adjustments to items such as picture and sound. You can also set a language for the subtitles and the Setup Display, among other things. For details on each Setup Display item, see page 81. For an overall list of Setup Display items, see page 103.

Note

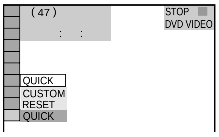
Playback settings stored in the disc take priority over the Setup Display settings and not all the functions described may work.

How to use the Setup Display

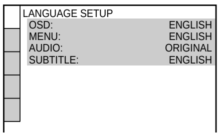


1 Press DISPLAY when the player is in stop mode.
The Control Menu appears.

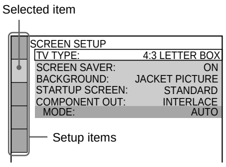
2 Press ↑/↓ to select (SETUP), then press ENTER.
The options for "SETUP" appear.



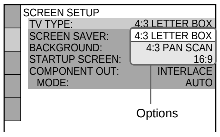
3 Press ↑/↓ to select "CUSTOM," then press ENTER.
The Setup Display appears.



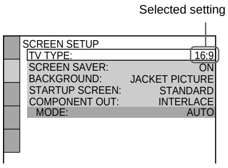
4 Press ↑/↓ to select the setup item from the displayed list: "LANGUAGE SETUP," "SCREEN SETUP," "CUSTOM SETUP," "AUDIO SETUP," or "SPEAKER SETUP." Then press ENTER.
The selected Setup item appears.
Example: "SCREEN SETUP"



5 Select an item using ↑/↓, then press ENTER.
The options for the selected item appear.
Example: "TV TYPE"



6 Select a setting using ↑/↓, then press ENTER.
The setting is selected and setup is complete.
Example: "16:9"



To turn off the Setup Display

Press DISPLAY repeatedly until the Setup Display is turned off.

If you select "QUICK" in Step 3, you will enter the Quick Setup mode (page 31). Follow from Step 5 of the Quick Setup explanation to make basic adjustments.

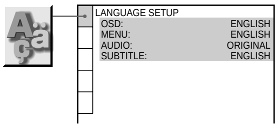
If you select "RESET" in Step 3, you can reset all of the "SETUP" settings on page 103 to 106 to the default settings. After you select "RESET" and press ENTER, select "YES" and press ENTER to reset the settings (it takes a few seconds to complete), or select "NO" and press ENTER to return to the Control Menu. Do not press POWER or I/⏻ when resetting the player.

Setting the Display or Sound Track Language

(LANGUAGE SETUP)

"LANGUAGE SETUP" allows you to set various languages for the on-screen display or sound track.

Select "LANGUAGE SETUP" in the Setup Display. For details on using the display, see "Using the Setup Display" (page 80).



■OSD (On-Screen Display)

Switches the display language on the screen. Select the language from the displayed list.

■MENU (DVD VIDEO only)

You can select the desired language for the disc's menu.

■AUDIO (DVD VIDEO only)

Switches the language of the sound track. Select the language from the displayed list. When you select "ORIGINAL," the language given priority in the disc is selected.

■SUBTITLE (DVD VIDEO only)

Switches the language of the subtitle recorded on the DVD VIDEO.
Select the language from the displayed list. When you select "AUDIO FOLLOW," the language for the subtitles changes according to the language you selected for the sound track.

continued

If you select "OTHERS →" in "MENU," "SUBTITLE," and "AUDIO," select and enter a language code from "Language Code List" (page 102) using the number buttons.

Note

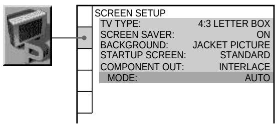
When you select a language that is not recorded on the DVD VIDEO, one of the recorded languages will be automatically selected (except for the "OSD").

Settings for the Display

(SCREEN SETUP)

Choose settings according to the TV to be connected.

Select "SCREEN SETUP" in the Setup Display. For details on using the display, see "Using the Setup Display" (page 80).
The default settings are underlined.



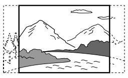
■TV TYPE

Selects the aspect ratio of the connected TV (4:3 standard or wide).

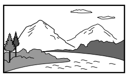
4:3 LETTER BOX	Select this when you connect a 4:3 screen TV. Displays a wide picture with bands on the upper and lower portions of the screen.
4:3 PAN SCAN	Select this when you connect a 4:3 screen TV. Automatically displays the wide picture on the entire screen and cuts off the portions that do not fit.
16:9	Select this when you connect a wide-screen TV or a TV with a wide mode function.

4:3 LETTER BOX

4:3 PAN SCAN



16:9



Note

Depending on the DVD, "4:3 LETTER BOX" may be selected automatically instead of "4:3 PAN SCAN" or vice versa.

■SCREEN SAVER

Turns on and off the screen saver so that the screen saver image appears when you leave the player in pause or stop mode for 15 minutes, or when you play back an SACD/CD for more than 15 minutes. The screen saver will help prevent your display device from becoming damaged (ghosting).
Press ▷ to turn off the screen saver.

ON	Turns on the screen saver.
OFF	Turns off the screen saver.

■BACKGROUND

Selects the background color or picture on the TV screen in stop mode or while playing an SACD/CD.

JACKET PICTURE	The jacket picture (still picture) appears in the background, but only when the jacket picture is already recorded on the disc (CD-EXTRA, etc.). If the disc does not contain a jacket picture, the "GRAPHICS" picture appears.
PICTURE MEMORY	Your favorite picture appears in the background. To store a scene in memory, see "Storing a picture in memory" below.
GRAPHICS	A preset picture stored in the player appears in the background.
BLUE	The background color is blue.
BLACK	The background color is black.

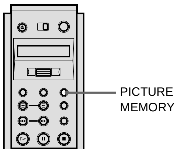
■STARTUP SCREEN

Selects the startup screen. The startup screen image you selected appears on the TV screen when you turn on the player.

STANDARD	The standard startup screen in the player's memory appears.
PICTURE MEMORY	Your favorite picture appears in the startup screen. To store a scene in memory, see "Storing a picture in memory" below.

Storing a picture in memory

The player can store one scene in memory for both the background and startup screen.
During playback, when you find a scene to be stored in memory, press PICTURE MEMORY.
The picture is stored in memory.



Note

If you operate the player while the picture is being stored in memory, the player will fail to store the picture.

■COMPONENT OUT

This will change the type of signal output from the COMPONENT VIDEO OUT jacks on the player. See page 97 for more information about the different types.

continued

INTERLACE	This outputs the signal in interlace format. Select this when you are connected to a standard (interlace format) TV.
PROGRESSIVE	This outputs the signal in progressive (480p) format. Select this when you have a TV that can accept progressive signals.

When the player outputs a Progressive video signal, "PROGRESSIVE" appears in the front panel display.

Note

If you select "PROGRESSIVE" when you connect the player to a TV that cannot accept the signal in progressive format (480p), the image quality will deteriorate. In this case, set the COMPONENT VIDEO OUT/SCAN SELECT switch on the back panel of the player to INTERLACE. Then set "COMPONENT OUT" to "INTERLACE" when you can see the TV screen correctly, and reset COMPONENT VIDEO OUT/SCAN SELECT switch to SELECTABLE.

When "PROGRESSIVE" is selected in "COMPONENT OUT"

You can fine-tune the Progressive (480p) video signal output when you select "PROGRESSIVE" in "COMPONENT OUT" of the "CUSTOM SETUP" display and connect the player to the TV that is able to accept the video signal in progressive format (480p).

■MODE (Conversion Modes)

DVD software can be divided into two types: film based software and video based software. Video based software is derived from TV, such as dramas and sit-coms, and displays images at 30 frames/60 fields per second. Film based software is derived from film and displays images at 24 frames per second. In order for these images to appear natural on your screen when output in PROGRESSIVE mode (60 frames per second), the progressive video signal needs to be converted to match the type of DVD software that you are watching. For more information about conversion modes, see "Progressive Conversion Methods of Film Based and Video Based Software."

AUTO	This will automatically detect if you are playing Film based or Video based software and convert the signal to the appropriate conversion mode. Normally select this position.
VIDEO	This will set the conversion mode for Video based software, regardless of the type of software that you are playing.

Notes

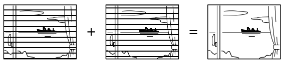
- Some DVD software contains both Video and Film. For instance, DVDs of movies may contain the movie taken on film, and a "Making of" sequence taken on video.
- When you play video based software with progressive signals, sections of some types of images may appear unnatural due to the conversion process when output through the COMPONENT VIDEO OUT jacks. Images from the S VIDEO OUT 1/2 and VIDEO OUT 1/2 jacks are unaffected as they are output in the interlace format.

Progressive conversion methods of Film based and Video based software

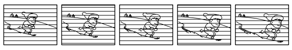
This player converts video based software and film based software in the following manner.

Video based software conversion

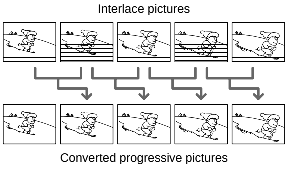
Video shows an image by alternately displaying every other line of an image (field) at 30 frames (60 fields) per second (Interlace format).



The Interlace format displays 30 frames (60 fields) per second by displaying every other line of the image, causing scanning lines to appear across the image. Furthermore, since only half of the image is shown at once, the amount of information contained in an image is limited.

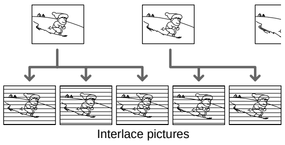


The Progressive format displays 60 entire frames per seconds. The player accomplishes this by converting each field into a frame by using either a field-based conversion method or a frame-based conversion method. The appropriate method is automatically selected by the player according to the movement of the images on the screen. If the movement on the screen is slow, the frame-based conversion method borrows adjacent field information to fill in the missing information. If the movement on the screen is rapid, the field-based conversion method creates the missing information by predicting the movement of the images on the screen from field to field. The end result is an image that is higher in quality when compared to the Interlace format.

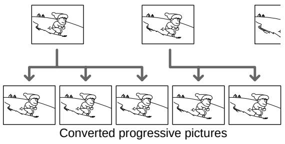


Film based software conversion

Film shows an image by displaying an entire image at 24 frames per second. When you watch a film on television, the television displays every other line of the frame as a field, thus reducing information level and the clarity of the film image.



This player solves this problem by increasing the speed at which the frames are displayed, consecutively showing 3 identical frames followed by 2 identical frames in the time that it normally takes to show 2 consecutive frames. The end result is that the 24 frames per second are increased to 60 frames per second, which is the speed at which Progressive video signals are shown.

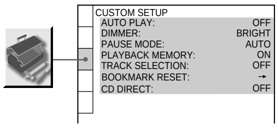


This not only allows film to be shown in a frame based format, it also increases the clarity and sharpness which is unique to Progressive format images.

Custom Settings (CUSTOM SETUP)

Use this to set up playback related and other settings.

Select "CUSTOM SETUP" in the Setup Display. For details on using the display, see "Using the Setup Display" (page 80).
The default settings are underlined.



■AUTO PLAY

Selects the Auto Play setting when you turn on the player.

OFF	Does not use "TIMER," "DEMO1," or "DEMO2" to start playback.
TIMER	Starts playing when the player is turned on. The player can start playback at any time when connected to a timer (not supplied). Set the timer when the player is in standby mode (the power indicator lights up in red).
DEMO1	Starts playing the first demonstration automatically.
DEMO2	Starts playing the second demonstration automatically.

■DIMMER

Adjusts the lighting of the front panel display.

BRIGHT	Makes the front panel display bright.
DARK	Makes the front panel display dark.
AUTO DARK	Makes the front panel display dark if you do not operate the player or remote for a short while.
AUTO OFF	Turns off the lightning of the front panel display if you do not operate the player or remote for a short while.
OFF	Turns off the lighting of the front panel display.

By using the FL OFF button on the player or scroll key on the remote, you can turn on/off the front panel display regardless the "DIMMER" setting (except when it is set to "OFF.")

■PAUSE MODE (DVD VIDEO/DVD-RW only)

Selects the picture in pause mode.

AUTO	The picture, including subjects that move dynamically, is output with no jitter. Normally select this position.
FRAME	The picture, including subjects that do not move dynamically, is output in high resolution.

■PLAYBACK MEMORY (DVD VIDEO/VIDEO CD only)

The player can store the "SUBTITLE" and other settings of each disc for up to 200 discs (Playback Memory).
Set the Playback Memory function "ON" or "OFF."

ON	Stores the settings in memory when you eject the disc.
OFF	Does not store the settings in memory.

The following settings are stored in memory by the Playback Memory function.
— ANGLE (page 64)*
— AUDIO (page 58)*
— BNR (page 66)
— BOOKMARK (page 53)
— DIGITAL VIDEO ENHANCER (page 70)
— SUBTITLE (page 65)*
— VIDEO EQUALIZER (page 67)
* DVD VIDEO only

Notes
- The player can store the settings of up to 200 discs. When you store the setting of disc number 201, the first disc setting is canceled.
- The Playback Memory function cannot be used for DVD-RWs in VR mode.
- During playback, do not turn off the player by pressing POWER on the player. Doing so may cancel the settings. When you turn off the player, press ■ first to stop playback and then press I/⏻ on the remote. After the power indicator lights up in red and the player enters standby mode, press POWER on the player.

■TRACK SELECTION (DVD VIDEO only)

Gives the sound track which contains the highest number of channels priority when you play a DVD VIDEO on which multiple audio formats (PCM, DTS, or Dolby Digital format) are recorded.

OFF	No priority given.
AUTO	Priority given.

Notes
- When you set the item to "AUTO," the language may change. The "TRACK SELECTION" setting has higher priority than the "AUDIO" settings in "LANGUAGE SETUP" (page 81).
- If PCM, DTS, and Dolby Digital sound tracks have the same number of channels, the player selects PCM, DTS, and Dolby Digital sound tracks in this order.

■BOOKMARK RESET→

Resets the bookmarks. Select this and press ENTER. The "BOOKMARK RESET" display appears. Press ENTER again to erase all of the bookmarks in all of the discs.

■CD DIRECT

Eliminates the use of unnecessary circuits when playing CDs. This setting will be activated when you open or close the disc tray.
This function affects the output of the following jacks:
— AUDIO OUT L/R 1/2 jacks
— 5.1CH OUTPUT jacks
— PHONES jack

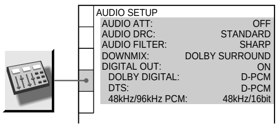
OFF	Select this when playing CD discs, including CD type DTS discs.
ON	Eliminates the use of unnecessary circuits needed to play CDs.

Note
If you select "ON" when playing CD type DTS discs, the sound will become noisy.

Settings for the Sound (AUDIO SETUP)

"AUDIO SETUP" allows you to set the sound according to the playback and connection conditions.

Select "AUDIO SETUP" in the Setup Display. For details on using the display, see "Using the Setup Display" (page 80).
The default settings are underlined.



■AUDIO ATT (attenuation)

If the playback sound is distorted, set this item to "ON." The player reduces the audio output level.
This function affects the output of the following jacks:
— AUDIO OUT L/R 1/2 jacks
— 5.1CH OUTPUT jacks
— PHONES jack

OFF	Turns off the audio attenuation. Normally, select this position.
ON	Reduces the audio output level so that no sound distortion occurs. Select this when the playback sound from the speakers is distorted.

■AUDIO DRC (Dynamic Range Control) (DVD VIDEO/DVD-RW only)

Makes the sound clear when the volume is turned down when playing a DVD that has the "AUDIO DRC" function. This affects the output from the following jacks:
— AUDIO OUT L/R 1/2 jacks
— 5.1CH OUTPUT jacks
— PHONES jack
— DIGITAL OUT (OPTICAL or COAXIAL) jack only when "DOLBY DIGITAL" is set to "D-PCM" (page 89).

STANDARD	Normally select this position.
TV MODE	Makes the low sounds clear even if you turn the volume down. It is especially recommended when you listen to the sound using the speakers of the TV.
WIDE RANGE	Gives you the feeling of being at a live performance. When you use high quality speakers, it is even more effective.

■AUDIO FILTER (except SACD)

Selects the digital filter to reduce noises above the 22.05 kHz (Sampling frequency (Fs) of the audio sources is 44.1 kHz), 24 kHz (Fs is 48 kHz), or 48 kHz (Fs is above 96 kHz).

SHARP	Provides a wide frequency range and spatial feeling.
SLOW	Provides smooth and warm sound.

Notes
- There may be little effect by changing the digital filter depending on discs or playback environment.
- There is no effect on SACDs.

■DOWNMIX (DVD VIDEO/DVD-RW only)

Switches the mixing down methods when you play a DVD on which rear signal components such as "LS", "RS," or "S" are recorded in Dolby Digital or DTS format. For details on the rear signal components, see "Changing the Sound" (page 58). This function affects the output of the following jacks:
— AUDIO OUT L/R 1/2 jacks
— DIGITAL OUT (OPTICAL or COAXICAL) jack when "DOLBY DIGITAL" and "DTS" are set to "D-PCM" (page 89).
— PHONES jack

DOLBY SURROUND	Select this when the player is connected to an audio component that conforms to Dolby Surround (Pro Logic). The output signals which reproduce the Dolby Surround effect are downmixed to 2 channels.
NORMAL	Select this when the player is connected to an audio component that does not conform to Dolby Surround (Pro Logic). All of the output signals are downmixed to 2 channels without the Dolby Surround (Pro Logic) effect.

■DIGITAL OUT

Selects if audio signals are output via the DIGITAL OUT (OPTICAL or COAXIAL) jack.

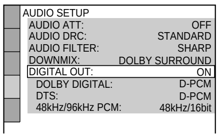
ON	Normally select this position. When you select "ON," set "DOLBY DIGITAL," "DTS," and "48kHz/96kHz PCM." For details on setting these items, see "Setting the digital output signal."
OFF	The player does not output the audio signals via the DIGITAL OUT (OPTICAL or COAXIAL) jack. The influence of the digital circuit upon the analog circuit is minimal.

Note
SACD audio signals are not output from the digital jack.

Setting the digital output signal

Switches the method of outputting audio signals when you connect the following component using an optical or a coaxial digital cord via the DIGITAL OUT (OPTICAL or COAXIAL) jack.
— Amplifier (receiver) with digital input jack
— Amplifier (receiver) with a built-in DTS or DOLBY DIGITAL decoder
— MD or DAT deck

For connection details, see page 23.
Select "DOLBY DIGITAL," "DTS," and "48kHz/96kHz PCM" after setting "DIGITAL OUT" to "ON."



■DOLBY DIGITAL (DVD VIDEO/DVD-RW only)

Selects the Dolby Digital signals to be output via the DIGITAL OUT (OPTICAL or COAXIAL) jack.

D-PCM	Select this when the player is connected to an audio component lacking a built-in Dolby Digital decoder. You can select whether the signals conform to Dolby Surround (Pro Logic) or not by making adjustments to the "DOWNMIX" item in "AUDIO SETUP" (page 88).
DOLBY DIGITAL	Select this when the player is connected to an audio component with a built-in Dolby Digital decoder. If the player is connected to an audio component lacking a built-in Dolby Digital decoder, do not set this. Otherwise, when you play the Dolby Digital sound track, a loud noise (or no sound) will come out from the speakers, affecting your ears or causing the speakers to be damaged.

continued

■**DTS (DVD VIDEO only)**

Selects the DTS signals to be output via the DIGITAL OUT (OPTICAL or COAXIAL) jack.

D-PCM	Select this when the player is connected to an audio component lacking a built-in DTS decoder. If you play DTS audio sound tracks, the player outputs stereo signals via the DIGITAL OUT (OPTICAL or COAXIAL) jacks.
DTS	Select this when the player is connected to an audio component having a built-in DTS decoder. If the player is connected to an audio component lacking a built-in DTS decoder, do not set this. Otherwise, when you play the DTS sound track, a loud noise (or no sound) will come out from the speakers, affecting your ears or causing the speakers to be damaged.

■**48kHz/96kHz PCM (DVD VIDEO only)**

Selects the sampling frequency of the audio signal to be output via the DIGITAL OUT (OPTICAL or COAXIAL) jack.

48kHz/16bit	The audio signals of DVD VIDEOs are always converted to 48kHz/16bit.
96kHz/24bit	All types of signals including 96kHz/24bit are output in their original format. However, if the signal is encrypted for copyright protection purposes, the signal is only output as 48kHz/16bit. If a receiver (amplifier) which cannot accept 96kHz is connected to the player, do not set this. Otherwise, a loud noise may come out from the speakers.

Notes

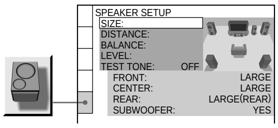
- Even if you set “48kHz/96kHz PCM” in “AUDIO SETUP” to “96kHz/24bit,” the sampling frequency is converted to 48kHz/16bit when a “SURROUND” mode (page 60) is selected.
- The analog audio signals from the AUDIO OUT L/R 1/2 jacks and 5.1 CH OUTPUT jacks are not affected by this setting and keep their original sampling frequency level.

Settings for the Speakers

(SPEAKER SETUP)

To obtain the best possible surround sound, set the size of the speakers you have connected and their distance from your listening position. Then use the test tone to adjust the volume and the balance of the speakers to the same level.
This setting is effective when connecting the speaker with 5.1 CH OUTPUT jacks (page 25).

Select “SPEAKER SETUP” in the Setup Display. For details on using the display, see “Using the Setup Display” (page 80).
The default settings are underlined.



To return to the default setting

Select the item, then press CLEAR. Note that only the “SIZE” setting does not return to the default setting.

■**SIZE**

Selects the size of the speakers to be connected.

- FRONT

LARGE	Normally select this position.
SMALL	When the sound cracks or the surround sound effects are difficult to hear, select this. This activates the bass redirection circuitry and outputs the bass frequencies of the front speaker from the subwoofer.

- CENTER

NONE	If you do not connect a center speaker, select this.
LARGE	Normally select this position.
SMALL	When the sound cracks or the surround sound effects are difficult to hear, select this. This activates the bass redirection circuitry and outputs the bass frequencies of the center speaker from other speakers.

- REAR

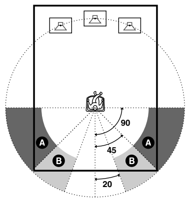
NONE	If you do not connect rear speakers, select this.
LARGE	(REAR/SIDE): Normally select this position. Select either of these according to the rear speaker’s position*.
SMALL	(REAR/SIDE): When the sound cracks or the surround sound effects are difficult to hear, select this. Select either of these according to the rear speaker’s position*. This activates the bass redirection circuitry and outputs the bass frequencies of the rear speaker from other speakers.

* Rear speaker position
Correctly specify the location of the rear speakers to enjoy the surround effect.
- Set to the “SIDE,” if the location of the rear speakers corresponds to section A below.
- Set to the “REAR,” if the location of the rear speakers corresponds to section B below.

Settings and Adjustments

continued

This setting affects only “VIRTUAL REAR SHIFT,” “VIRTUAL MULTI REAR,” and “VIRTUAL MULTI DIMENSION” mode (page 60).
These settings do not affect the SACD Multi audio signals.



- SUBWOOFER

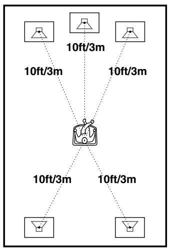
NONE	If you do not connect a subwoofer, select this. This activates the bass redirection circuitry and outputs the LFE signals from the front speakers as long as the front speaker size is set to “LARGE.”
YES	If you connect a subwoofer, select this to output the LFE (low frequency effect) channel from the subwoofer. When you set the other speakers settings to “SMALL,” the subwoofer makes up for the missing bass frequencies of the speakers.

Notes

- The cut off frequency for the subwoofer is fixed at 120 Hz.
- If your speakers are too small to reproduce low bass frequencies, please set all speaker settings to “SMALL” and utilize a subwoofer for low frequency sound.
- Even if there are fewer than 6 speakers connected, the player distributes the audio signal components to the front speakers.

■**DISTANCE**

You can set distance from the listening position to your speakers. Set the distance to your front speakers in “FRONT” first. Values in “CENTER” (center speaker) and “REAR” (rear speaker) will automatically change to the same value. Adjust these values to reflect the actual distance to your center and rear speakers within the area described in the following table.
The default distance setting for the speakers in relation to the listening position is shown below.



Be sure to change the value in the Setup Display when you move the speakers. The default adjustments are in parentheses.

FRONT (10ft/3m)	Front speaker distance from the listening position can be set in 1 foot (0.3meter) increments from 4 to 50 feet (1.2 to 15.2 meters).
CENTER (10ft/3m)	Center speaker distance can be moved up to 2 feet (0.6 meter) backward from the front speakers or 5 feet (1.5 meters) forward closer to the listening position, in 1 foot (0.3 meter) increments.
REAR (10ft/3m)	Rear speaker distance can be moved up to 16 feet (4.8 meters) closer to your listening position from the front speaker position, in 1 foot (0.3 meter) increments.

Notes

- If each of the front or rear speakers are not placed at an equal distance from your listening position, set the distance according to the closest speaker.
- Do not place the rear speakers farther away from your listening position than the front speakers.
- These settings do not affect the SACD Multi audio signals.

■**BALANCE**

You can vary the balance of the left and right speakers as follows. Be sure to set “TEST TONE” to “ON” for easy adjustment.
The default adjustments are in parentheses.

FRONT (0dB)	Adjust the balance between the front left and right speakers (–6dB [L] to +6dB [R], 0.5dB increments).
REAR (0dB)	Adjust the balance between the rear left and right speakers (–6dB [L] to +6dB [R], 0.5dB increments).

■**LEVEL**

You can vary the level of each speaker as follows. Be sure to set “TEST TONE” to “ON” for easy adjustment.
The default adjustments are in parentheses.

FRONT (0dB)	Adjust the level of the front speakers (–6dB to 0dB, 0.5 dB increments).
CENTER (0dB)	Adjust the level of the center speaker (–12dB to 0dB, 0.5dB increments).
REAR (0dB)	Adjust the level of the rear speakers (–12dB to 0dB, 0.5dB increments).
SUBWOOFER (0dB)	Adjust the level of the subwoofer (–10dB to +10dB, 0.5dB increments).

To adjust the volume of all the speakers at one time

Use the amplifier’s (receiver’s) volume control.

■**TEST TONE**

The speakers will emit a test tone. Use this when you use the 5.1CH OUTPUT jacks and adjust the “BALANCE” and “LEVEL.”

OFF	The test tone is not emitted from the speakers.
ON	The test tone is emitted from each speaker in sequence while adjusting balance or level. When you select one of the “SPEAKER SETUP” items, the test tone is emitted from both left and right speakers simultaneously.

Adjusting the speaker volume and level

1 **Select “SPEAKER SETUP” in the Setup Display.**

2 **Select “TEST TONE” and set to “ON.”**
You will hear the test tone from each speaker in sequence.

3 **From your listening position, select “BALANCE” or “LEVEL” and adjust the value of “BALANCE” using ←/→ and “LEVEL” using ↑/↓.**
The test tone is emitted from both left and right speakers simultaneously.

4 **Select “TEST TONE” and set to “OFF” to turn off the test tone.**

Notes

- When you adjust the speaker settings, the sound cuts off for a moment.
- The test tone signals are not output from the digital jack.

Settings and Adjustments

Troubleshooting

If you experience any of the following difficulties while using the player, use this troubleshooting guide to help remedy the problem before requesting repairs. Should any problem persist, consult your nearest Sony dealer.

Power

The power is not turned on.

➡ Check that the power cord is connected securely.

Picture

There is no picture.

➡ The connecting cords are not connected securely.
➡ The connecting cords are damaged.
➡ The player is not connected to the correct TV input jack (page 20).
➡ The video input on the TV is not correctly set.
➡ You have pressed VIDEO ON/OFF (or VIDEO OFF) (page 37).
➡ You have selected “PROGRESSIVE” in “COMPONENT OUT” even though your TV cannot accept the signal in progressive format. In this case, set the COMPONENT VIDEO OUT/SCAN SELECT switch on the back panel of the player to INTERLACE. Then set “COMPONENT OUT” to “INTERLACE” after you can see the TV screen correctly, and reset COMPONENT VIDEO OUT/SCAN SELECT switch to SELECTABLE.

Picture noise appears.

➡ The disc is dirty or flawed.
➡ If the picture output from your player goes through your VCR to get to your TV, the copy-protection signal applied to some DVD programs could affect picture quality. If you still experience problems even when you connect your player directly to your TV, please try connecting your player to your TV’s S video input (page 20).
➡ You have selected “PROGRESSIVE” in “COMPONENT OUT” even though your TV cannot accept the signal in progressive format. In this case, set the COMPONENT VIDEO OUT/SCAN SELECT switch on the back panel of the player to INTERLACE. Then set “COMPONENT OUT” to “INTERLACE” after you can see the TV screen correctly, and reset COMPONENT VIDEO OUT/SCAN SELECT switch to SELECTABLE.
➡ Even if your TV is compatible with progressive format (480p) signals, the image may be affected when you set “COMPONENT OUT” to “PROGRESSIVE.” In this case, set “COMPONENT OUT” to “INTERLACE.”

Even though you set the aspect ratio in “TV TYPE” of “SCREEN SETUP,” the picture does not fill the screen.

➡ The aspect ratio of the disc is fixed on your DVD.

Sound

There is no sound.

➡ The connecting cord is not connected securely.
➡ The connecting cord is damaged.
➡ The player is connected to the wrong input jack on the amplifier (receiver) (page 25, 27, 29).
➡ The amplifier (receiver) input is not correctly set.
➡ The player is in pause mode or in Slow-motion Play mode.
➡ The player is in fast forward or fast reverse mode.
➡ If the audio signal does not come through the DIGITAL OUT (OPTICAL or COAXIAL) jack, check the audio settings (page 89).
➡ SACD audio signals are not output from the digital jack.

Sound is noisy.

➡ The disc is dirty or flawed.

Sound distortion occurs.

➡ Set “AUDIO ATT” in “AUDIO SETUP” to “ON” (page 88).

The surround effect is difficult to hear when you are playing a Dolby Digital, or DTS sound track.

➡ Check the speaker connections and setting (page 25, 31, 89)
➡ Depending on the DVD, the output signal may not be the entire 5.1 channels. It may be monaural or stereo even if the sound track is recorded in Dolby Digital or DTS format.

The sound comes from the center speaker only.

➡ Depending on the disc, the sound may come from the center speaker only.
➡ Set “SURROUND” to “OFF” in the Control Menu display (page 60).

Operation

The remote does not function.

➡ There are obstacles between the remote and the player.
➡ The distance between the remote and the player is too far.
➡ The remote is not pointed at the remote sensor on the player.
➡ The batteries in the remote are weak.

The disc does not play.

➡ There is no disc inside.
➡ The disc is turned over.
Insert the disc with the playback side facing down on the disc tray.
➡ The disc is skewed.
➡ The player cannot play CD-ROMs, etc. (page 6).
➡ The region code on the DVD does not match the player.
➡ Moisture has condensed inside the player. Remove the disc and leave the player turned on for about half an hour. Turn on the power again before playing the disc (page 3).
➡ The player cannot play DVD-Rs, DVD-RWs, CD-Rs, or CD-RWs that are not finalized.

The disc does not start playing from the beginning.

➡ Program Play, Shuffle Play, Repeat Play, or A-B Repeat Play has been selected (page 43). Press CLEAR to cancel these functions before playing a disc.
➡ Resume Play has been selected.
During stop, press ■ on the player or the remote and then start playback (page 39).
➡ Depending upon the disc, the menu may automatically appear on the TV screen.

The player starts playing the disc automatically.

➡ The disc features an auto playback function.
➡ “AUTO PLAY” in “CUSTOM SETUP” is set to “TIMER” (page 86).

Playback stops automatically.

➡ Some discs may contain an auto pause signal. While playing such a disc, the player stops playback at the auto pause signal.

You cannot perform some functions such as Stop, Search, Slow-motion Play, Repeat Play, Shuffle Play, or Program Play.

➡ Depending on the disc, you may not be able to do some of the operations above. See the operating manual that comes with the disc.

continued

The language for the sound track cannot be changed.

➡ Try using the DVD’s menu instead of the scroll key on the remote (page 40).
➡ Multilingual tracks are not recorded on the DVD being played.
➡ The DVD prohibits the changing of the language for the sound track.

The subtitle language cannot be changed.

➡ Try using the DVD’s menu instead of the scroll key on the remote (page 40).
➡ Multilingual subtitles are not recorded on the DVD being played.
➡ The DVD prohibits the changing of the subtitles.

The subtitle cannot be turned off.

➡ Try using the DVD’s menu instead of the scroll key on the remote (page 40).
➡ The DVD prohibits the subtitles being turned off.

The angles cannot be changed.

➡ Try using the DVD’s menu instead of the scroll key on the remote (page 40).
➡ Multi-angles are not recorded on the DVD being played. The angle can only be changed when the “ANGLE” indicator lights up on the front panel display (page 9).
➡ The DVD prohibits changing of the angles.

The player does not operate properly.

➡ When static electricity, etc., causes the player to operate abnormally, press POWER on the player to turn the player off and then on again.

Nothing is displayed on the front panel display.

➡ Turn on the front panel display using the FL OFF button or scroll key, or set “DIMMER” to any setting other than “OFF.”

5 numbers or letters are displayed on the screen and on the front panel display.

➡ The self-diagnosis function was activated. (See the table on page 97.)

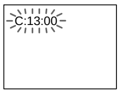
The disc tray does not open and “LOCKED” appears on the front panel display.

➡ Contact your Sony dealer or local authorized Sony service facility.

Self-diagnosis Function

(When letters/numbers appear in the display)

When the self-diagnosis function is activated to prevent the player from malfunctioning, a five-character service number (e.g., C 13 00) with a combination of a letter and four digits appears on the screen and the front panel display. In this case, check the following table.



First three characters of the service number	Cause and/or corrective action
C 13	The disc is dirty. ➡ Clean the disc with a soft cloth (page 7).
C 31	The disc is not inserted correctly. ➡ Re-insert the disc correctly.
E XX (xx is a number)	To prevent a malfunction, the player has performed the self-diagnosis function. ➡ Contact your nearest Sony dealer or local authorized Sony service facility and give the 5-character service number. Example: E 61 10

Glossary

Chapter (page 9)
Sections of a picture or a music feature that are smaller than titles. A title is composed of several chapters. Depending on the disc, no chapters may be recorded.

Digital Cinema Sound (DCS) (page 62)
Technology that Sony developed to enjoy surround in a home using 4 or more speakers. It simulates the sound of a movie editing studio instead of the usual concert hall so that you can enjoy the surround sound of a movie theater in the comfort of your own home.

Dolby Digital (page 25, 89)
Digital audio compression technology developed by Dolby Laboratories. This technology conforms to 5.1-channel surround sound. The rear channel is stereo and there is a discrete subwoofer channel in this format. Dolby Digital provides the same 5.1 discrete channels of high quality digital audio found in Dolby Digital cinema audio systems. Good channel separation is realized because all of the channel data are recorded discretely and little deterioration is realized because all channel data processing is digital.

Dolby Surround (Pro Logic) (page 29)
Audio signal processing technology that Dolby Laboratories developed for surround sound. When the input signal contains a surround component, the Pro Logic process outputs the front, center and rear signals. The rear channel is monaural.

continued

DTS (page 25, 89)
Digital audio compression technology that Digital Theater Systems, Inc. developed. This technology conforms to 5.1-channel surround sound. The rear channel is stereo and there is a discrete subwoofer channel in this format. DTS provides the same 5.1 discrete channels of high quality digital audio.
Good channel separation is realized because all of the channel data is recorded discretely and little deterioration is realized because all channel data processing is digital.

DVD VIDEO (page 6)
A disc that contains up to 8 hours of moving pictures even though its diameter is the same as a CD.
The data capacity of a single-layer and single-sided DVD is 4.7 GB (Giga Byte), which is 7 times that of a CD. The data capacity of a double-layer and single-sided DVD is 8.5 GB, a single-layer and double-sided DVD is 9.4 GB, and double-layer and double-sided DVD is 17GB.
The picture data uses the MPEG 2 format, one of the worldwide standards of digital compression technology. The picture data is compressed to about 1/40 (average) of its original size. The DVD also uses a variable rate coding technology that changes the data to be allocated according to the status of the picture. Audio information is recorded in a multi-channel format, such as Dolby Digital, allowing you to enjoy a more real audio presence.
Furthermore, various advanced functions such as the multi-angle, multilingual, and Parental Control functions are provided with the DVD.

DVD-RW (page 6)
A DVD-RW is a recordable and rewritable disc with the same size as the DVD VIDEO. The DVD-RW can be recorded in two different modes: VR mode and Video mode. VR (Video Recording) mode enables various programming and editing functions, some of which are limited in the case of Video mode. Video mode complies with DVD VIDEO format and is compatible with DVD players while a DVD-RW recorded in VR mode can only be played on DVD-RW compliant players. The "DVD-RW" appears in this manual, or the on-screen display refers to DVD-RWs in VR mode.

Film based software (page 85)
DVDs can be classified as Film based or Video based software. Film based DVDs contain the same images (24 frames per second) that are shown at movie theaters.

Interlace format (page 84)
Interlace format shows every other line of an image as a single "field" and is the standard method for displaying images on television. The even number field shows the even numbered lines of an image, and the odd numbered field shows the odd numbered lines of an image.

Index (SACD/CD)/Video Index (VIDEO CD) (page 9)
A number that divides a track into sections to easily locate the point you want on an SACD/ CD or VIDEO CD. Depending on the disc, no index may be recorded.

Parental Control (page 72)
A function of the DVD used to limit playback of the disc according to the age of the user and the limitation level in each country. The limitation varies from disc to disc; when it is activated, or playback is completely prohibited, violent scenes are skipped or replaced with other scenes, etc.

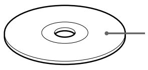
Progressive format (page 84)
Compared to the Interlace format that alternately shows every other line of an image (field) to create one frame, the Progressive format shows the entire image at once as a single frame. This means that while the Interlace format can show 30 frames (60 fields) in one second, the Progressive format can show 60 frames in one second. The overall picture quality increases and still images, text, and horizontal lines appear sharper. This player is compatible with the 480 progressive format.

Region Code (page 6)
This system is used to protect the copyrights. A region number is allocated on each DVD player or DVD disc according to the sales region. Each region code is shown on the player as well as on the disc packaging. The player can play the discs that match its region code. The player can also play discs with the ALL mark. Even when the region code is not shown on the DVD, the region limit may still be activated.

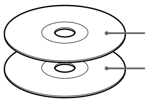
Scene (page 9)
On a VIDEO CD with PBC (playback control) functions, the menu screens, moving pictures and still pictures are divided into sections called "scenes."

Super Audio CD (SACD) (page 6)
An SACD disc can reproduce sounds that are extremely faithful to the original sound by use of DSD (Direct Stream Digital) technology. This technology utilizes a sampling frequency of 2.8224 MHz, which is 64 times that of a conventional CD, and 1-bit quantization that enables the disc to hold 4 times the amount of information that a standard PCM format CD can hold. SACDs are divided into the following types.

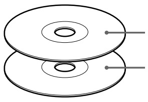
- Super Audio CD (single layer disc)
  This disc consists of a single HD layer*.
  * High density signal layer for the Super Audio CD



- Super Audio CD (dual layer disc)
  This disc consists of dual HD layers and is capable of extended play over long periods. Also, as the dual layer disc consists of dual HD layers on one side only, you do not have to turn the disc over during playback.



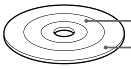
- Super Audio CD + CD (Hybrid disc)
  This disc consists of an HD layer and a CD layer. Also, as the dual layers are on one side only, you do not have to turn the disc over during playback. You can play the CD layer using a conventional CD player.



Additional Information

continued

- 2 channel + Multi-channel Super Audio CD
  This disc consists of the 2 channel playback area and the multi-channel playback area.



Title (page 9)
The longest section of a picture or music feature on a DVD, movie, etc., in video software, or the entire album in audio software.

Track (page 9)
Sections of a picture or a music feature on an SACD/CD or VIDEO CD (the length of a song).

TV Virtual Surround (TVS) (page 60)
Technology from Sony developed to produce surround sound for home use using just a stereo TV. Designed to work with the sound characteristics of your TV, this technology brings the excitement of surround sound to your home using nothing more than your stereo TV's internal speakers. Furthermore, various TVS modes are available. For example, "TVS WIDE" uses just two speakers to create a virtual sound environment that makes you feel like you are surrounded by multiple speakers.

Video based software (page 84)
DVDs can be classified as Film based or Video based software. Television dramas or sit-coms are examples of Video based software and display images at 30 frames (or 60 fields) per second.

Language Code List

For details, see pages 58, 65, 81.
The language spellings conform to the ISO 639: 1988 (E/F) standard.

Code	Language
1027	Afar
1028	Abkhazian
1032	Afrikaans
1039	Amharic
1044	Arabic
1045	Assamese
1051	Aymara
1052	Azerbaijani
1053	Bashkir
1057	Byelorussian
1059	Bulgarian
1060	Bihari
1061	Bislama
1066	Bengali; Bangla
1067	Tibetan
1070	Breton
1079	Catalan
1093	Corsican
1097	Czech
1103	Welsh
1105	Danish
1109	German
1130	Bhutani
1142	Greek
1144	English
1145	Esperanto
1149	Spanish
1150	Estonian
1151	Basque
1157	Persian
1165	Finnish
1166	Fiji
1171	Faroese
1174	French
1181	Frisian
1183	Irish
1186	Scots Gaelic
1194	Galician
1196	Guarani
1203	Gujarati
1209	Hausa
1217	Hindi
1226	Croatian
1229	Hungarian
1233	Armenian
1235	Interlingua
1239	Interlingue
1245	Inupiak
1248	Indonesian
1253	Icelandic
1254	Italian
1257	Hebrew
1261	Japanese
1269	Yiddish
1283	Javanese
1287	Georgian
1297	Kazakh
1298	Greenlandic
1299	Cambodian
1300	Kannada
1301	Korean
1305	Kashmiri
1307	Kurdish
1311	Kirghiz
1313	Latin
1326	Lingala
1327	Laothian
1332	Lithuanian
1334	Latvian; Lettish
1345	Malagasy
1347	Maori
1349	Macedonian
1350	Malayalam
1352	Mongolian
1353	Moldavian
1356	Marathi
1357	Malay
1358	Maltese
1363	Burmese
1365	Nauru
1369	Nepali
1376	Dutch
1379	Norwegian
1393	Occitan
1403	(Afan)Oromo
1408	Oriya
1417	Punjabi
1428	Polish
1435	Pashto; Pushto
1436	Portuguese
1463	Quechua
1481	Rhaeto-Romance
1482	Kirundi
1483	Romanian
1489	Russian
1491	Kinyarwanda
1495	Sanskrit
1498	Sindhi
1501	Sangho
1502	Serbo-Croatian
1503	Singhalese
1505	Slovak
1506	Slovenian
1507	Samoan
1508	Shona
1509	Somali
1511	Albanian
1512	Serbian
1513	Siswati
1514	Sesotho
1515	Sundanese
1516	Swedish
1517	Swahili
1521	Tamil
1525	Telugu
1527	Tajik
1528	Thai
1529	Tigrinya
1531	Turkmen
1532	Tagalog
1534	Setswana
1535	Tonga
1538	Turkish
1539	Tsonga
1540	Tatar
1543	Twi
1557	Ukrainian
1564	Urdu
1572	Uzbek
1581	Vietnamese
1587	Volapük
1613	Wolof
1632	Xhosa
1665	Yoruba
1684	Chinese
1697	Zulu
1703	Not specified

List of Setup Display Items

The default settings are underlined.

LANGUAGE SETUP (page 81)

OSD	ENGLISH FRENCH SPANISH PORTUGUESE
MENU	ENGLISH FRENCH SPANISH PORTUGUESE GERMAN ITALIAN DUTCH CHINESE JAPANESE DANISH SWEDISH FINNISH NORWEGIAN RUSSIAN OTHERS →
AUDIO	ORIGINAL (All other selections are the same as the "MENU" language.)
SUBTITLE	AUDIO FOLLOW (All other selections are the same as the "MENU" language.)

SCREEN SETUP (page 82)

TV TYPE	4:3 LETTER BOX 4:3 PAN SCAN 16:9		
SCREEN SAVER	ON OFF		
BACKGROUND	JACKET PICTURE PICTURE MEMORY GRAPHICS BLUE BLACK		
STARTUP SCREEN	STANDARD PICTURE MEMORY		
COMPONENT OUT	INTERLACE		
	PROGRESSIVE	MODE	AUTO VIDEO

CUSTOM SETUP (page 86)

AUTO PLAY	OFF TIMER DEMO1 DEMO2
DIMMER	BRIGHT DARK AUTO DARK AUTO OFF OFF
PAUSE MODE	AUTO FRAME
PLAYBACK MEMORY	ON OFF
TRACK SELECTION	OFF AUTO
BOOKMARK RESET	→
CD DIRECT	OFF ON

continued

AUDIO SETUP (page 88)

AUDIO ATT	OFF ON		
AUDIO DRC	STANDARD TV MODE WIDE RANGE		
AUDIO FILTER	SHARP SLOW		
DOWNMIX	DOLBY SURROUND NORMAL		
DIGITAL OUT	ON	DOLBY DIGITAL	D-PCM DOLBY DIGITAL
		DTS	D-PCM DTS
		48 kHz/96 kHz PCM	48 kHz/16 bit 96 kHz/24 bit
	OFF		

SPEAKER SETUP (page 91)

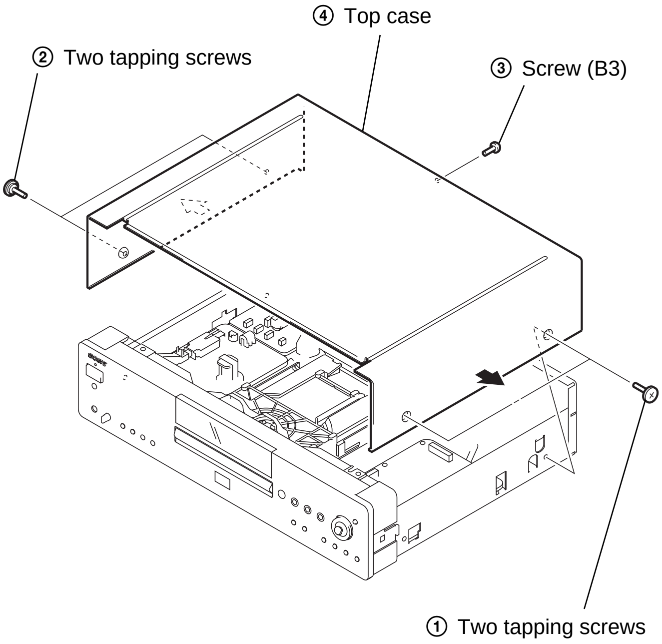
SIZE	FRONT	LARGE SMALL
	CENTER	NONE LARGE SMALL
	REAR	NONE LARGE (REAR) LARGE (SIDE) SMALL (REAR) SMALL (SIDE)
	SUBWOOFER	NONE YES
DISTANCE (The distance from the listening position.)	FRONT	4ft ~ 50ft (1.2m ~ 15.2m)
	CENTER	0ft ~ 52ft (0m ~ 15.8m) (It changes to match the front speaker setting.)
	REAR	0ft ~ 50ft (0m ~ 15.2m) (It changes to match the front speaker setting.)
BALANCE	FRONT	– 6dB ~ + 6dB
	REAR	– 6dB ~ + 6dB
LEVEL	FRONT	– 6dB ~ 0dB
	CENTER	– 12dB ~ 0dB
	REAR	– 12dB ~ 0dB
	SUBWOOFER	– 10dB ~ + 10dB
TEST TONE	OFF ON	

continued

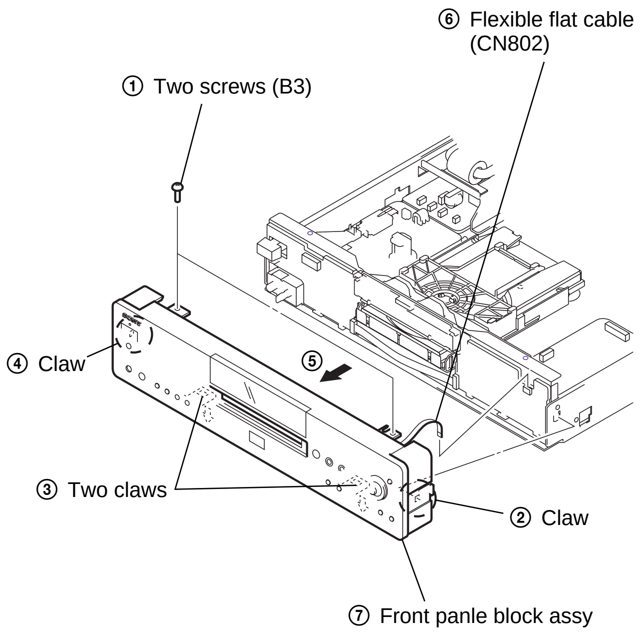
SECTION 2
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

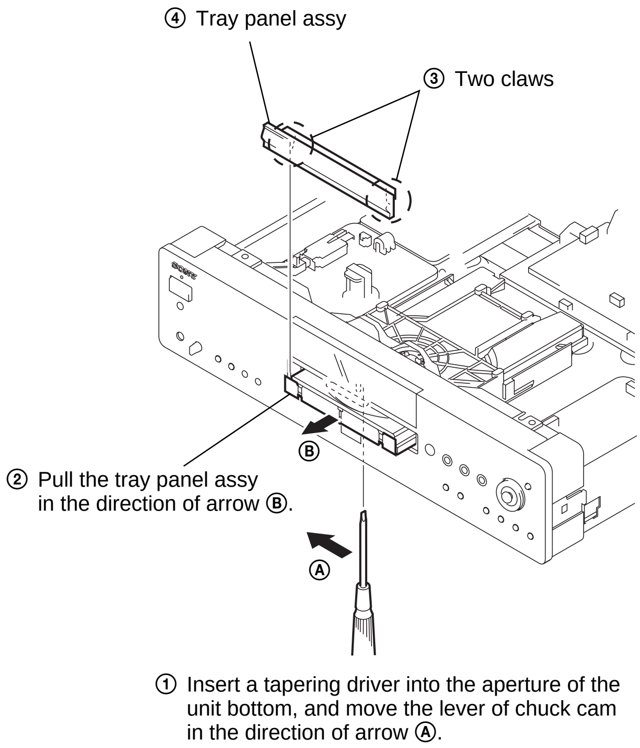
2-1. TOP CASE REMOVAL



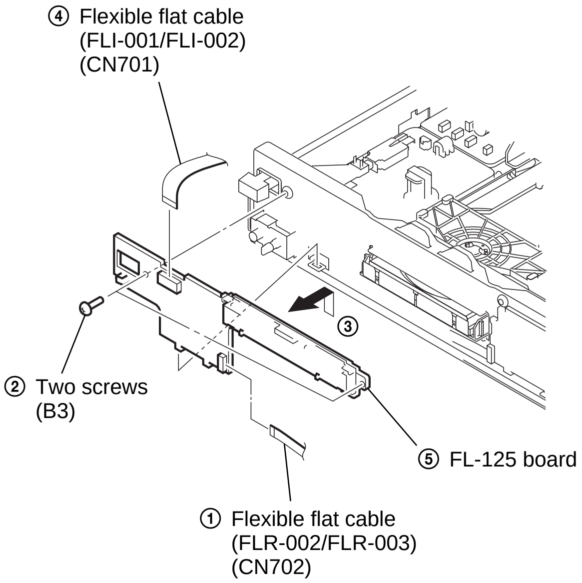
2-3. FRONT PANEL BLOCK ASSY REMOVAL



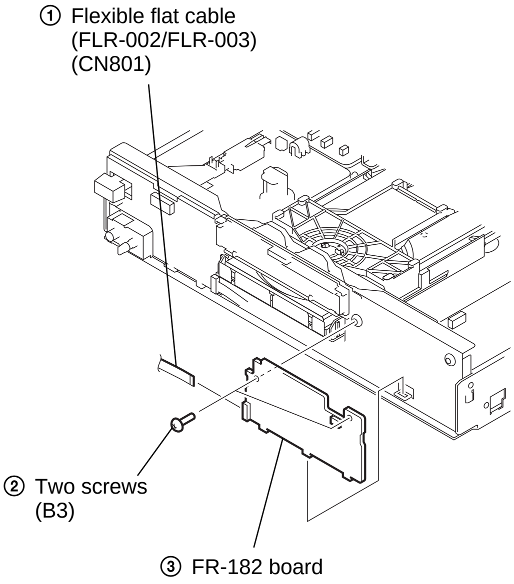
2-2. TRAY PANEL ASSY REMOVAL



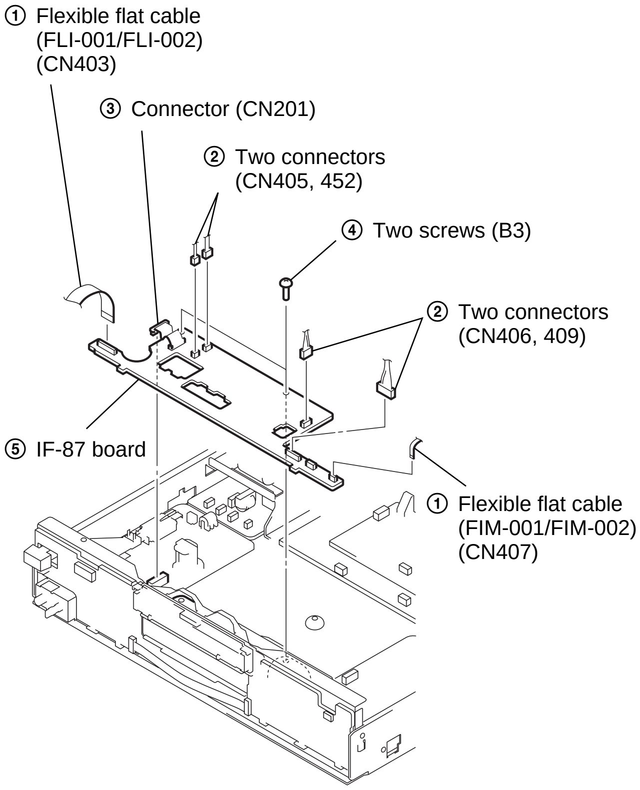
2-4. FL-125 BOARD REMOVAL



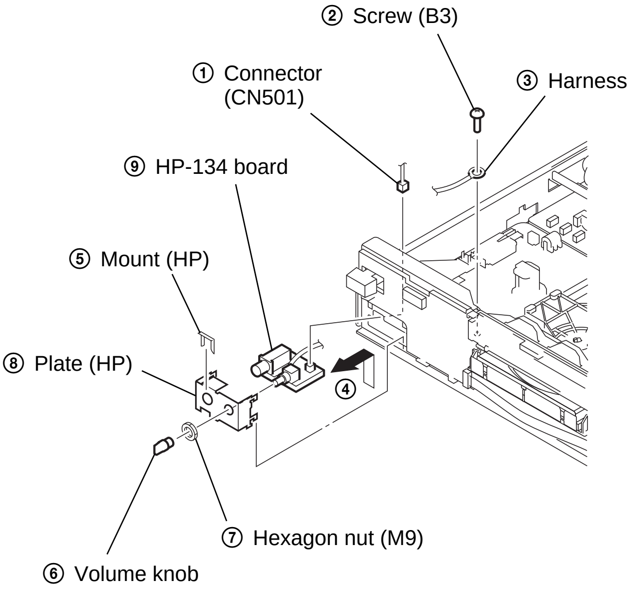
2-5. FR-182 BOARD REMOVAL



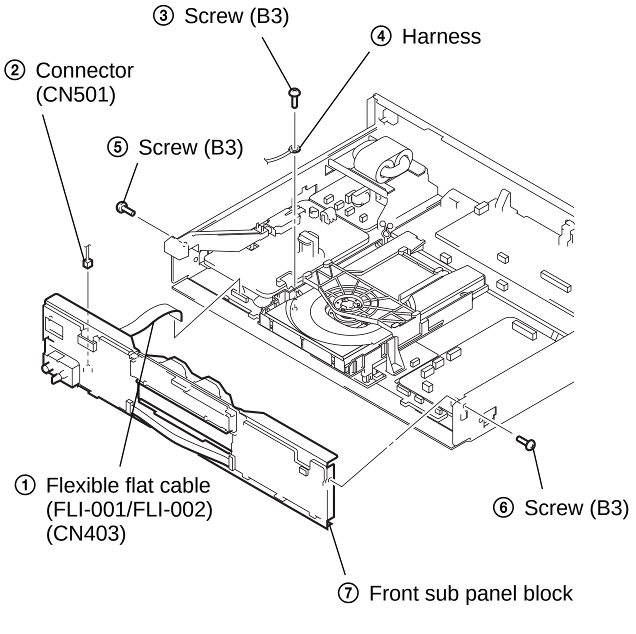
2-7. IF-87 BOARD REMOVAL



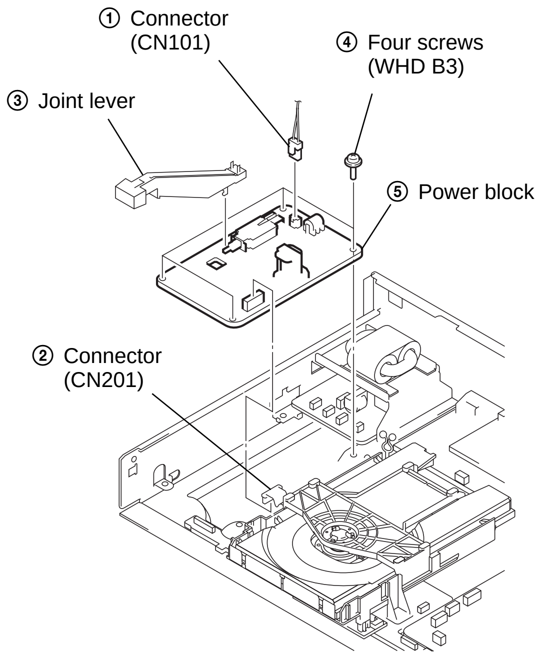
2-6. HP-134 BOARD REMOVAL



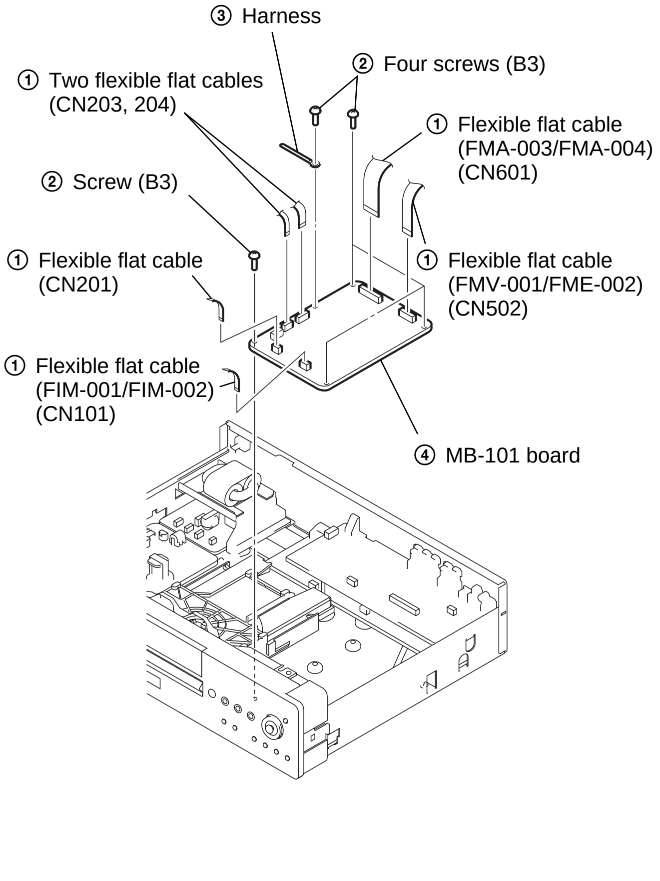
2-8. FRONT SUB PANEL BLOCK REMOVAL



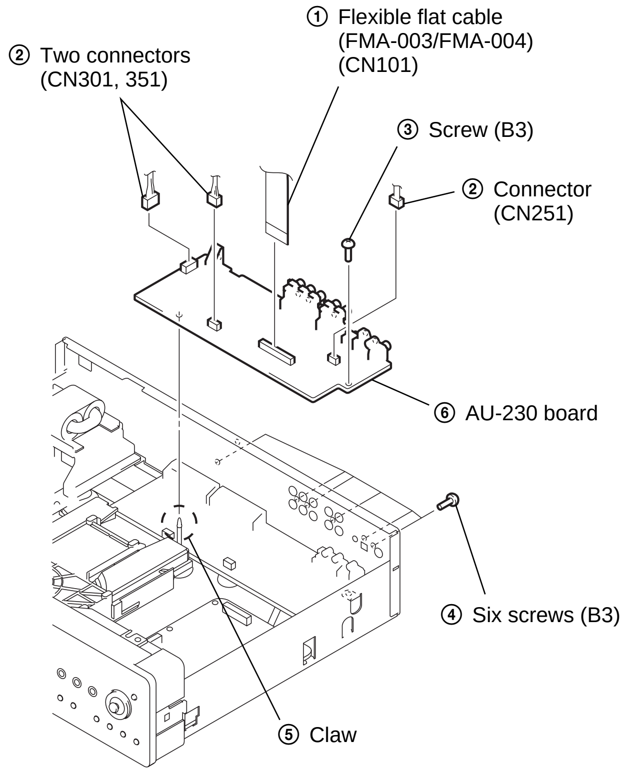
2-9. POWER BLOCK REMOVAL



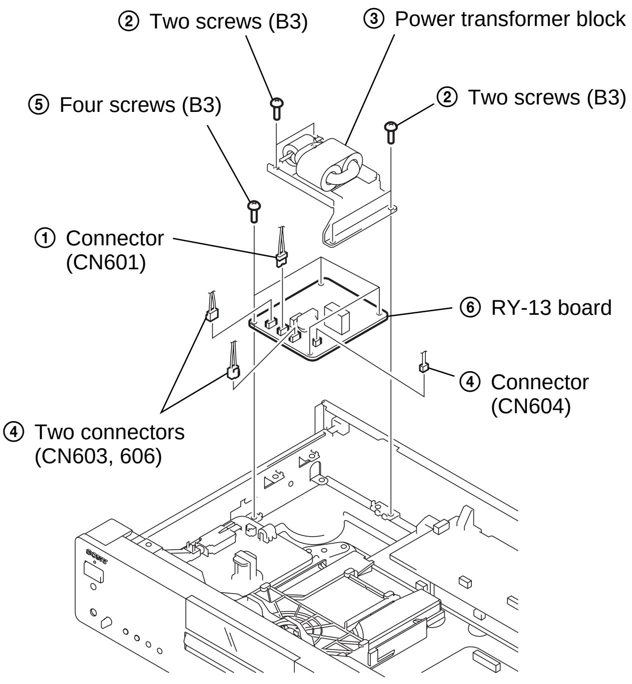
2-10. MB-101 BOARD REMOVAL



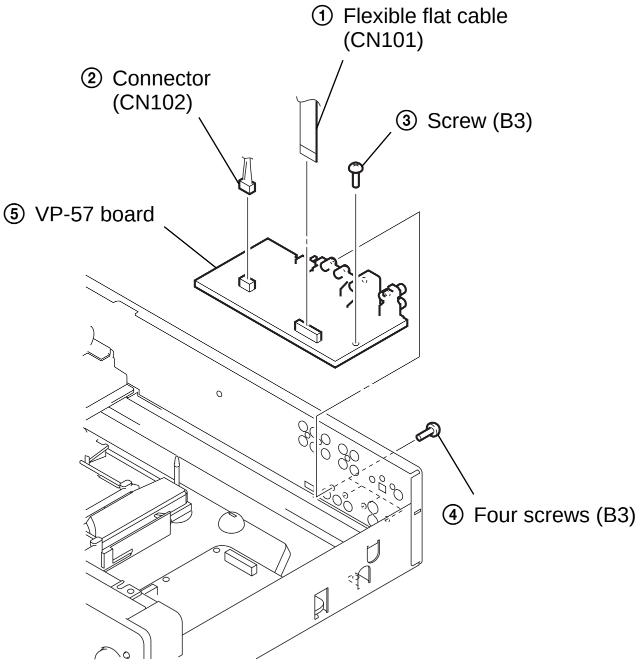
2-11. AU-230 BOARD REMOVAL



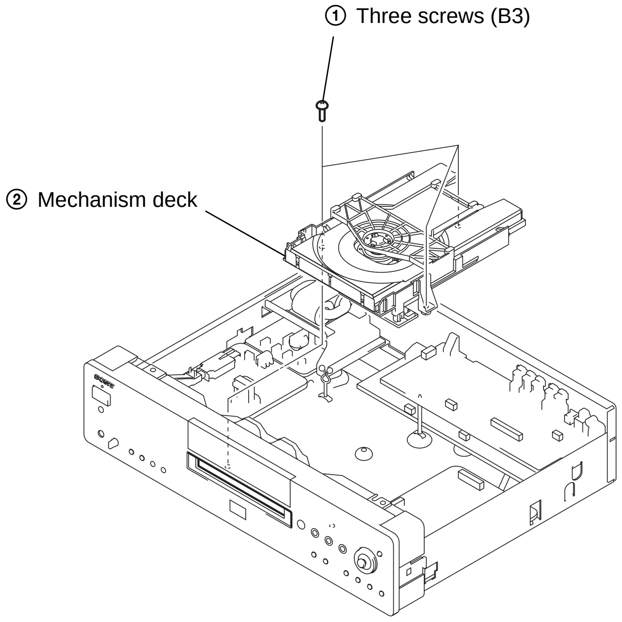
2-12. RY-13 BOARD REMOVAL



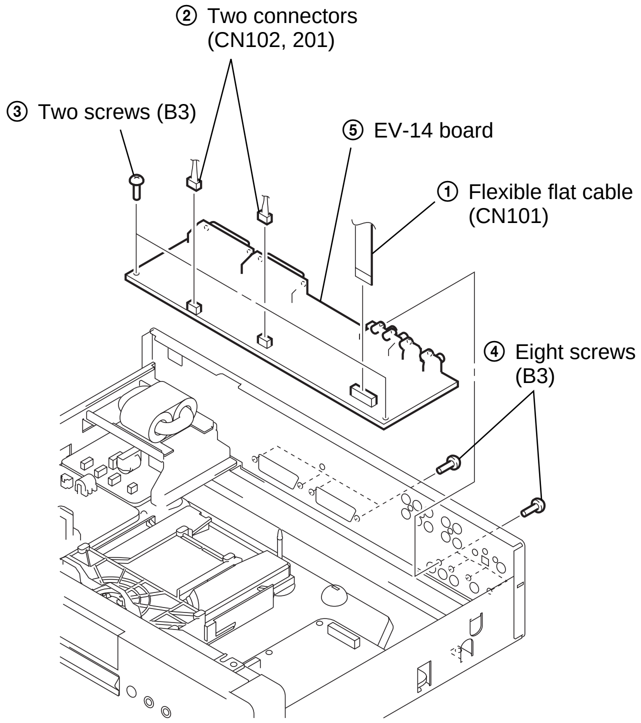
2-13. VP-57 BOARD REMOVAL (EXCEPT AEP, UK, Russian)



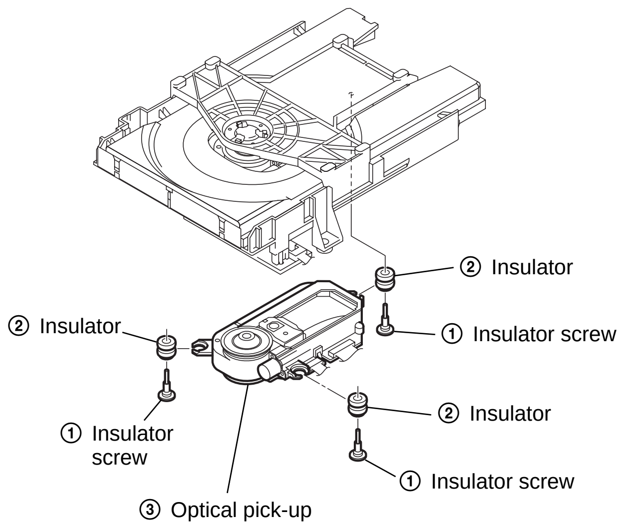
2-15. MECHANISM DECK REMOVAL



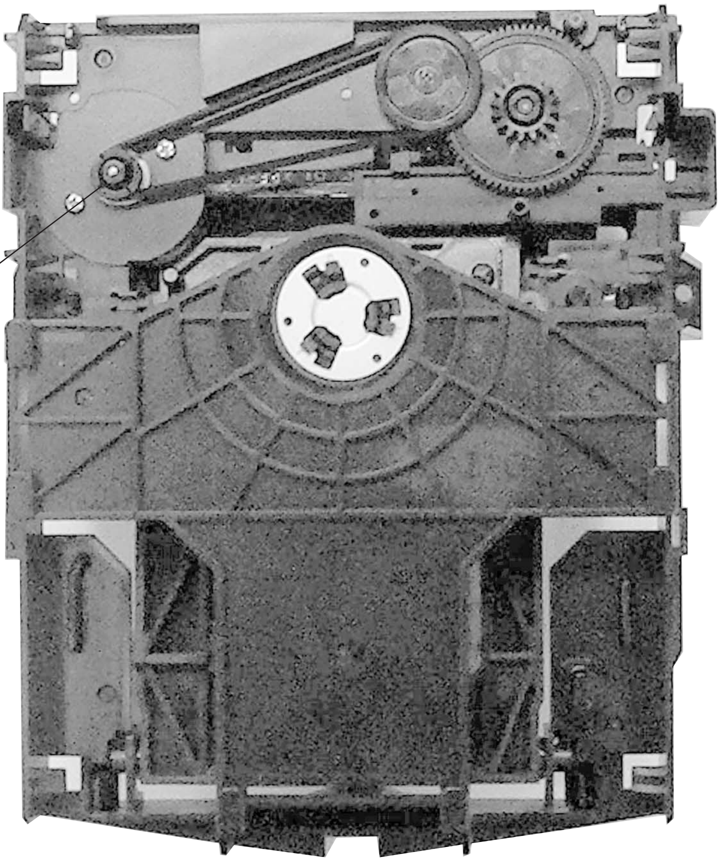
2-14. EV-14 BOARD REMOVAL (AEP, UK, Russian)

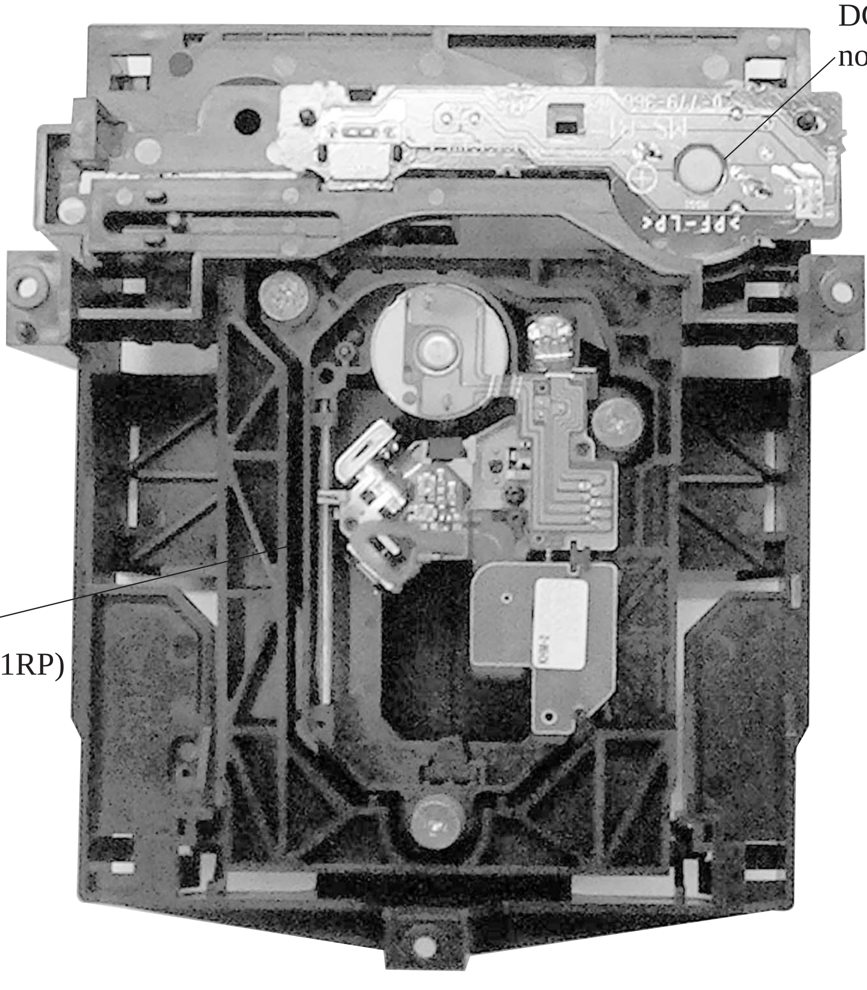


2-16. OPTICAL PICK-UP REMOVAL

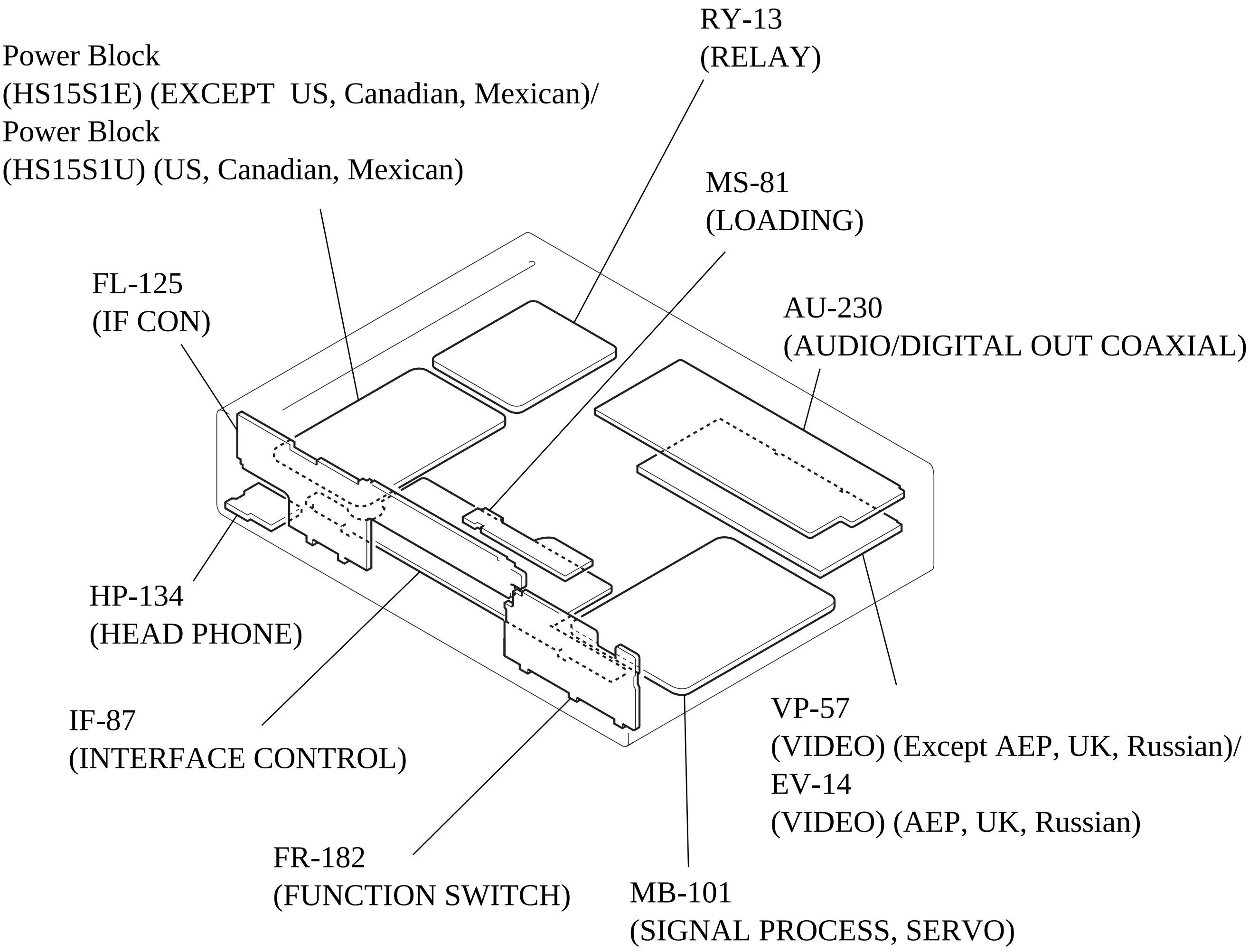


2-17. INTERNAL VIEWS



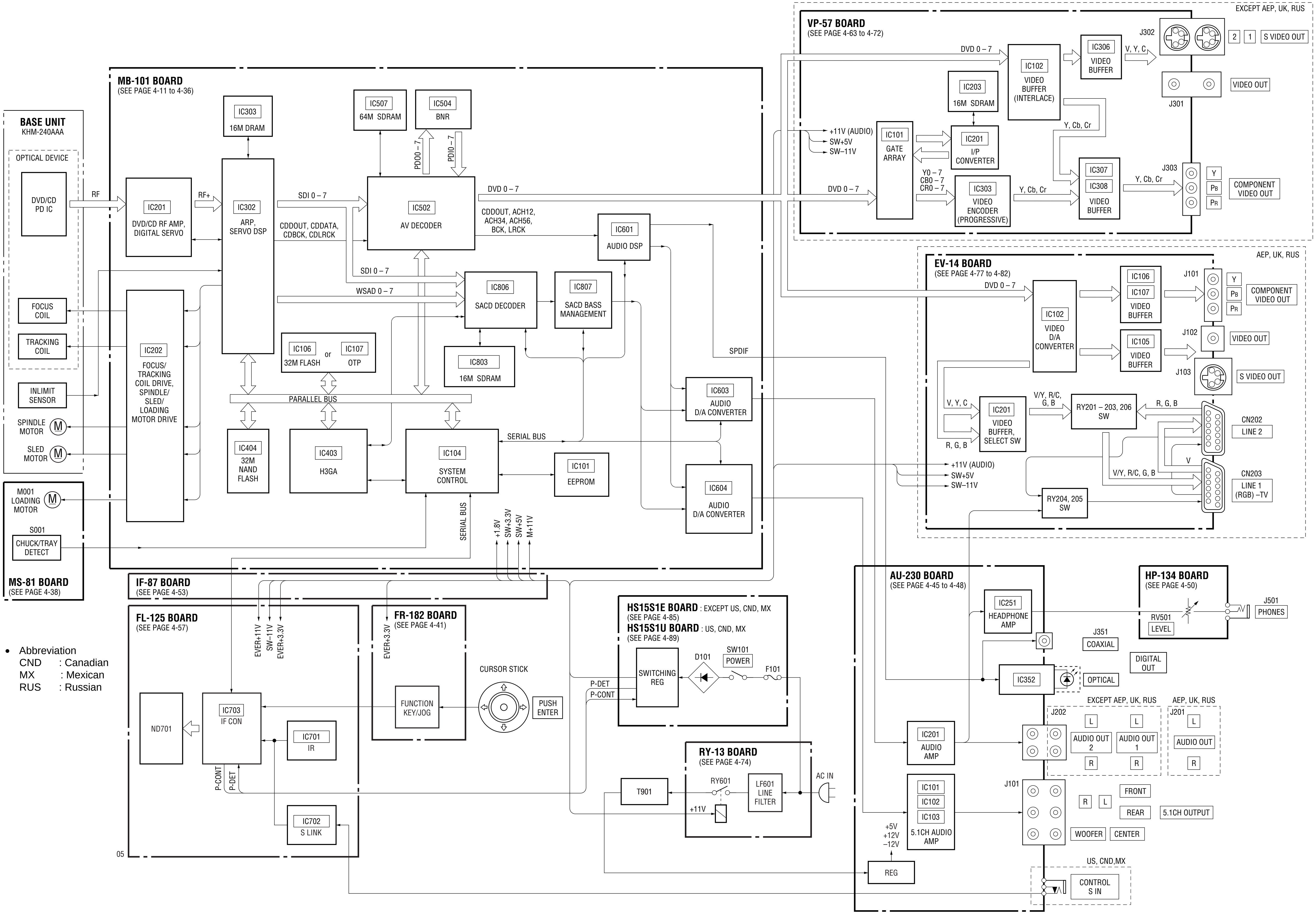


2-18. CIRCUIT BOARDS LOCATION



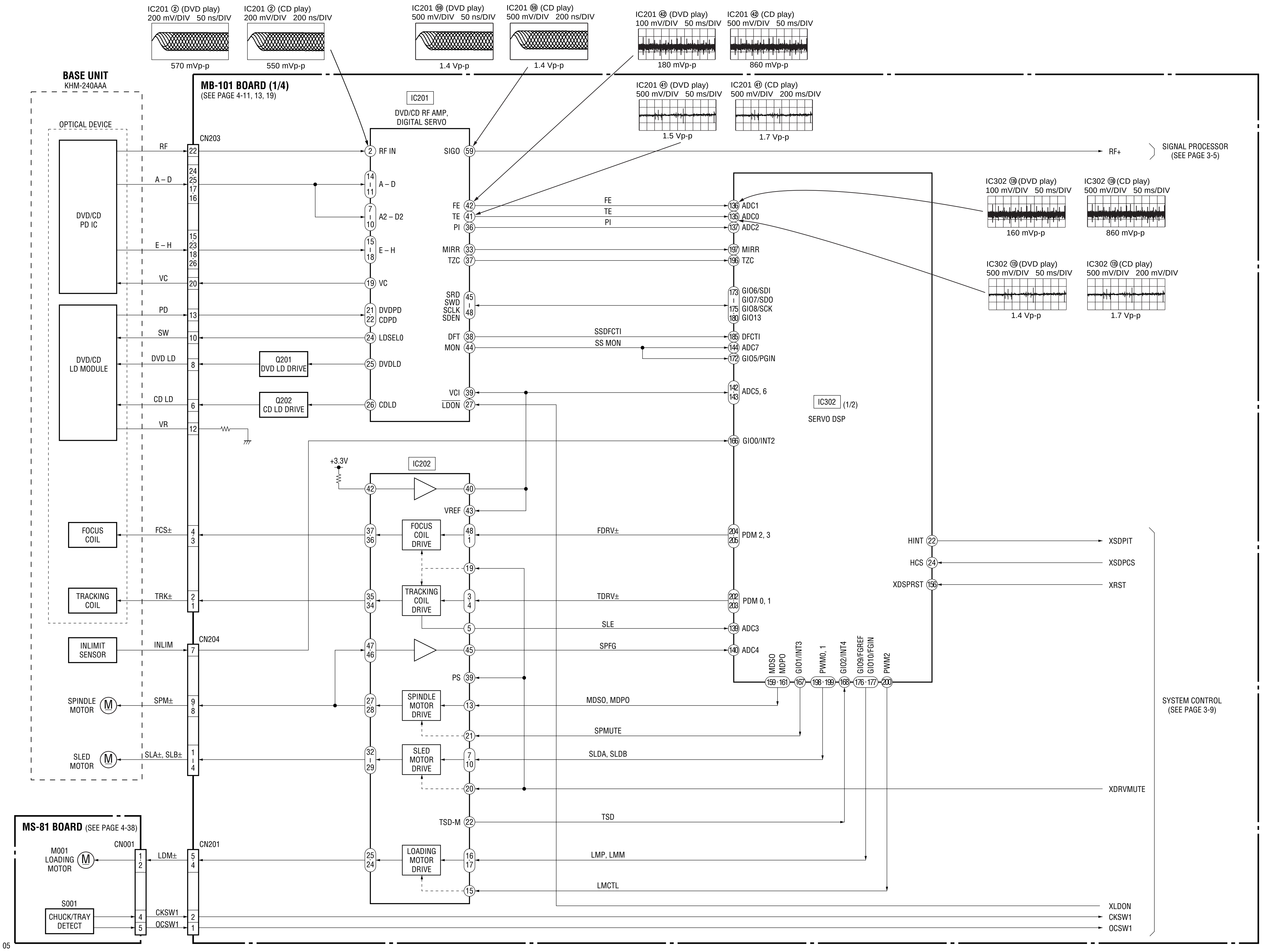
SECTION 3
BLOCK DIAGRAMS

3-1. OVERALL BLOCK DIAGRAM

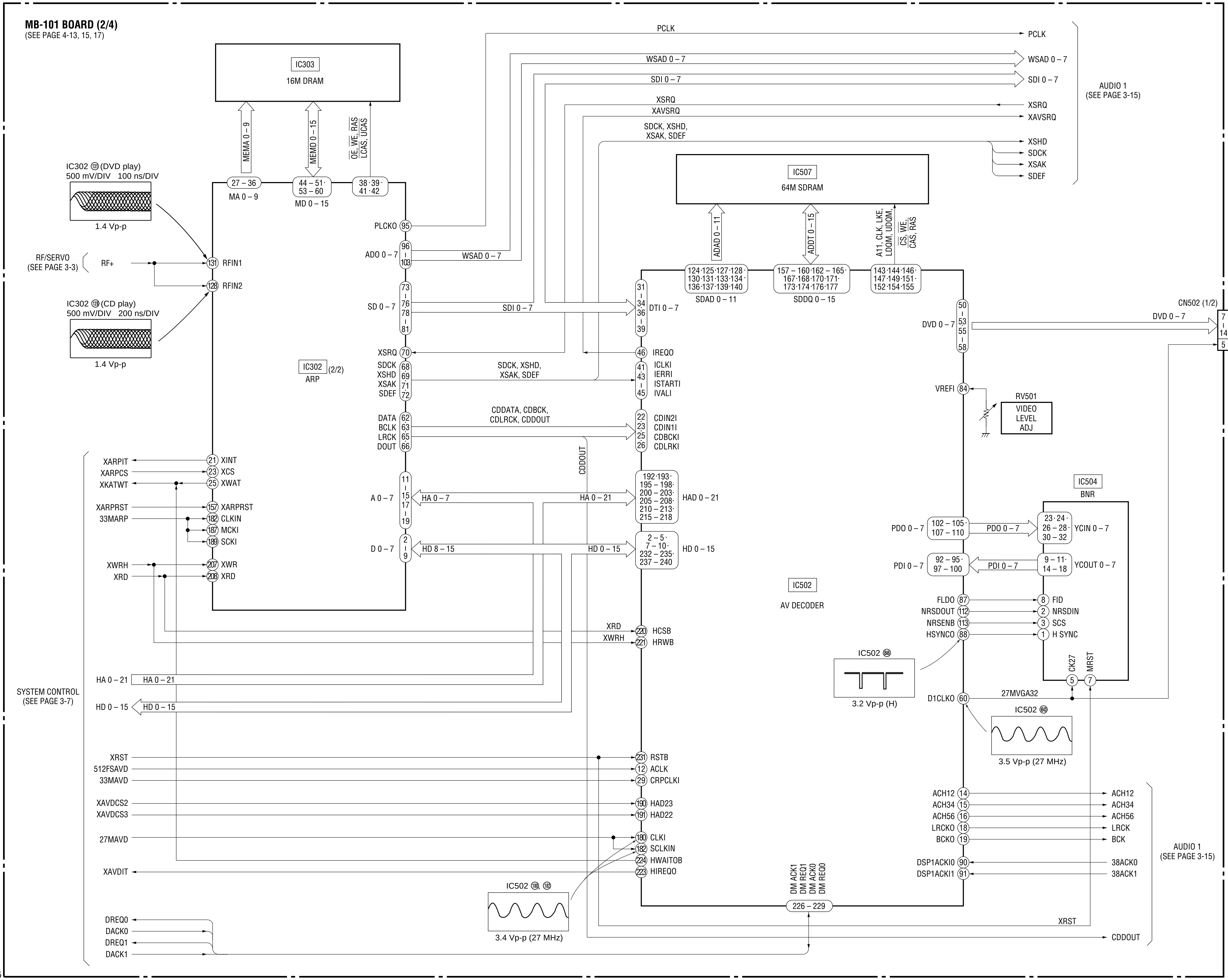


- Abbreviation
  - CND : Canadian
  - MX : Mexican
  - RUS : Russian

3-2. RF/SERVO BLOCK DIAGRAM

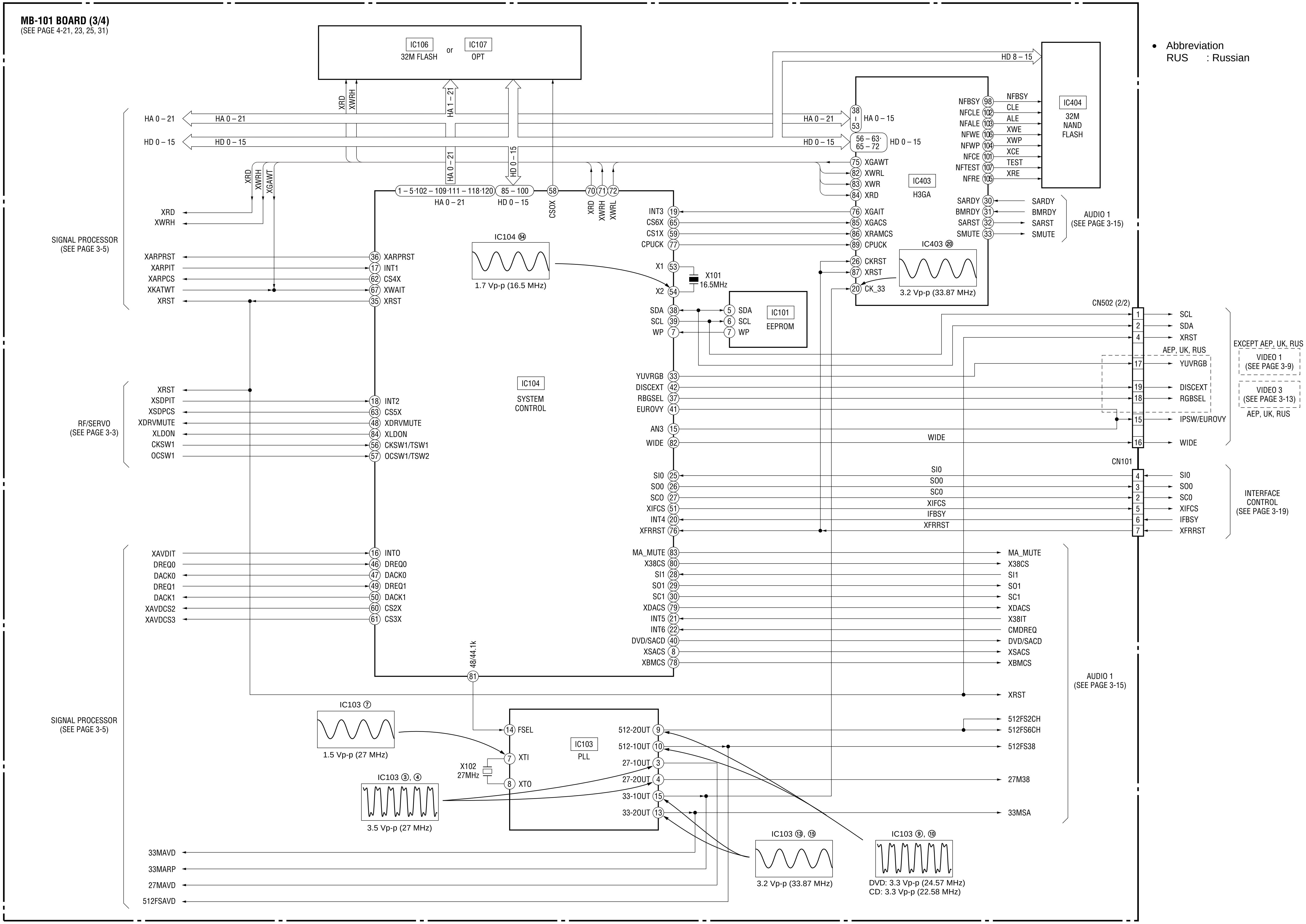


3-3. SIGNAL PROCESS BLOCK DIAGRAM



- Abbreviation
  RUS : Russian

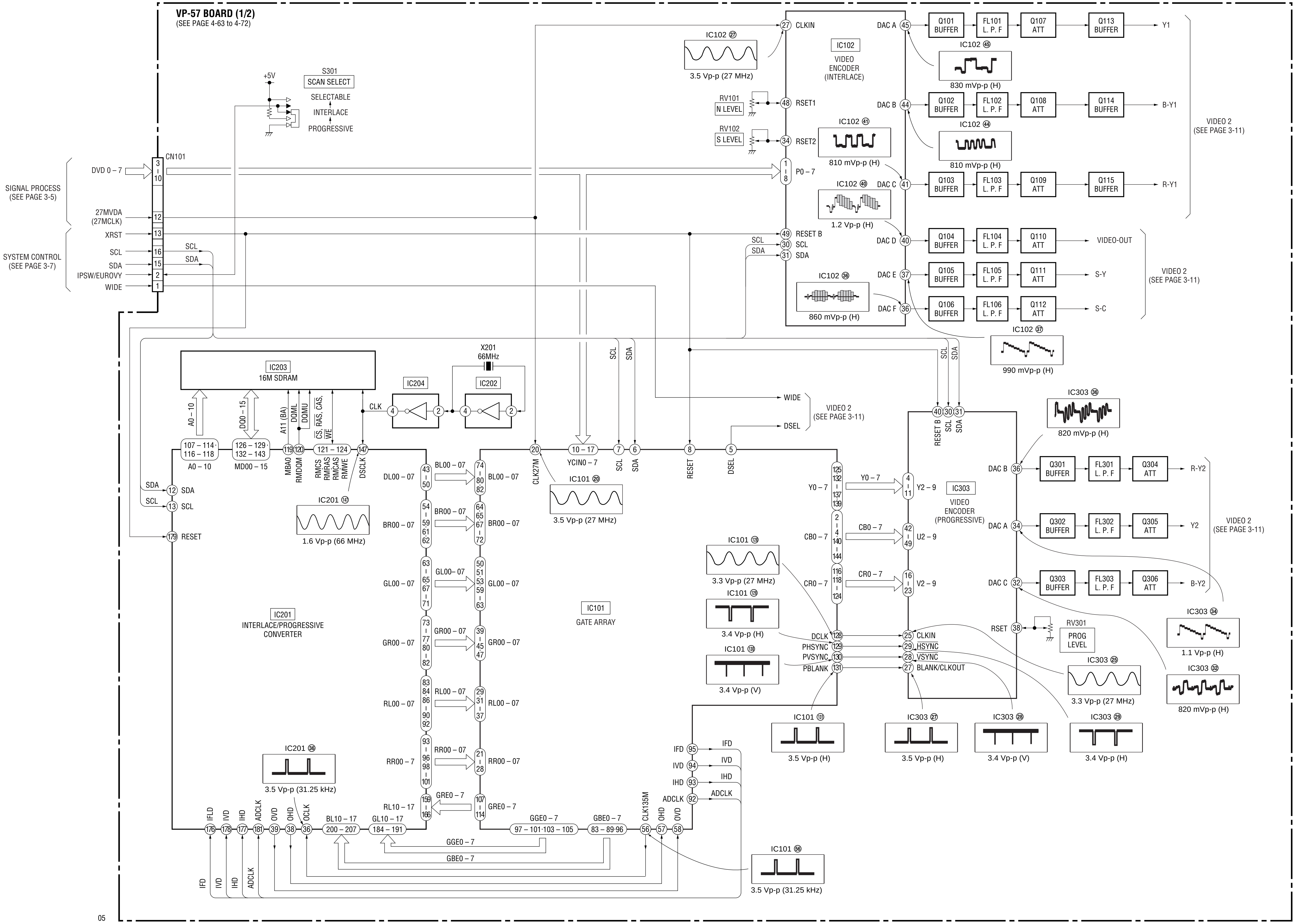
3-4. SYSTEM CONTROL BLOCK DIAGRAM



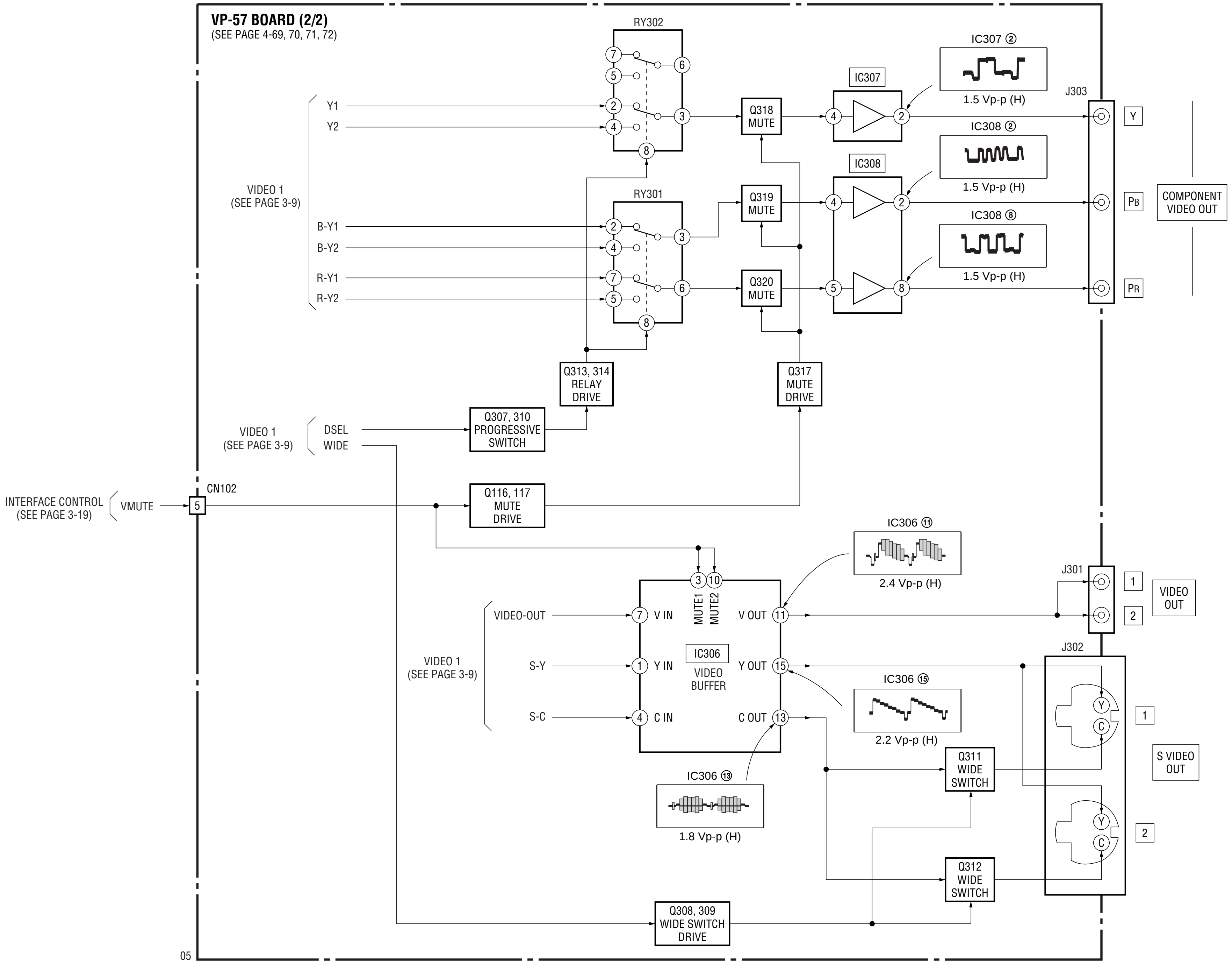
- Abbreviation
  RUS : Russian

05

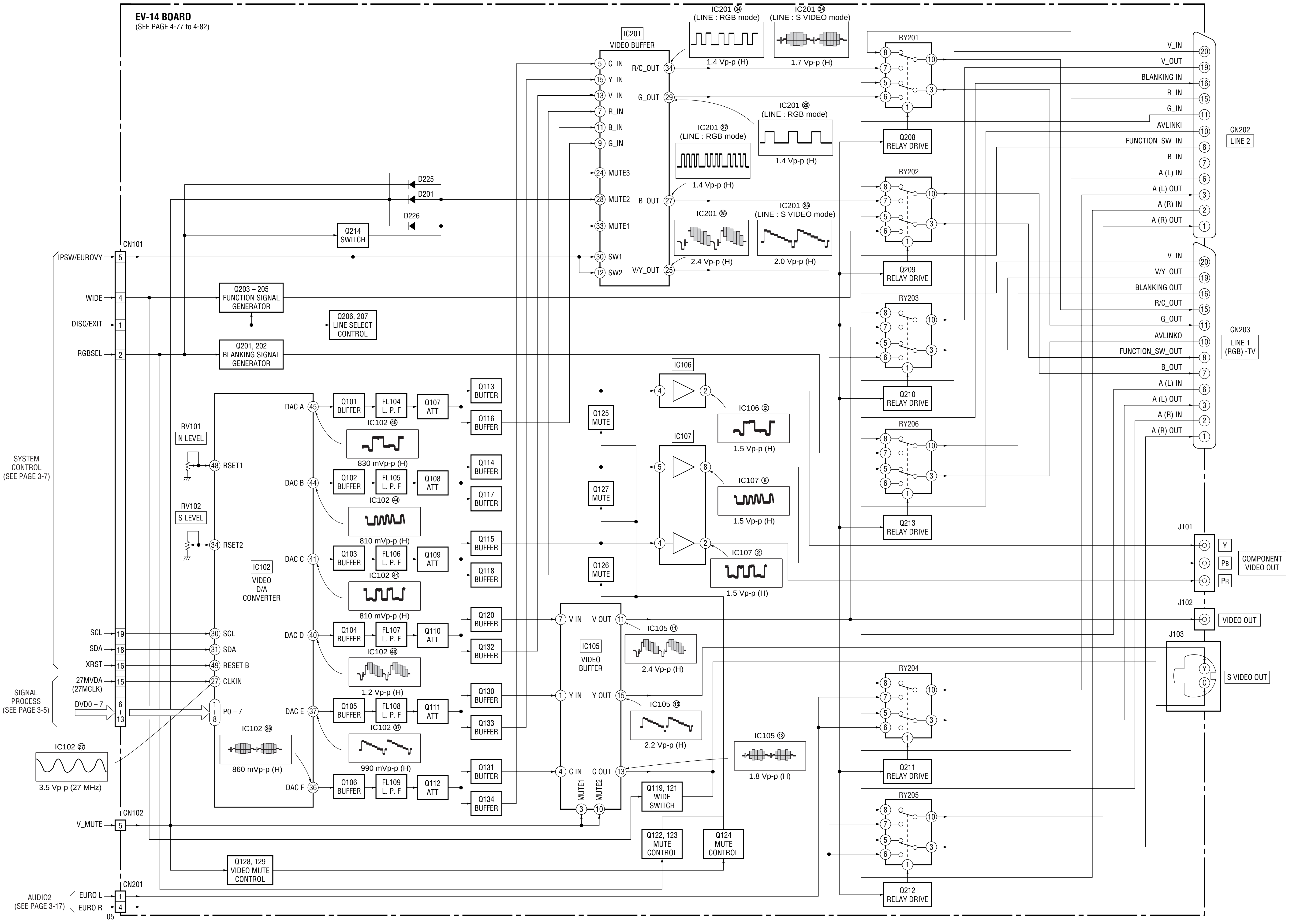
3-5. VIDEO (1) BLOCK DIAGRAM



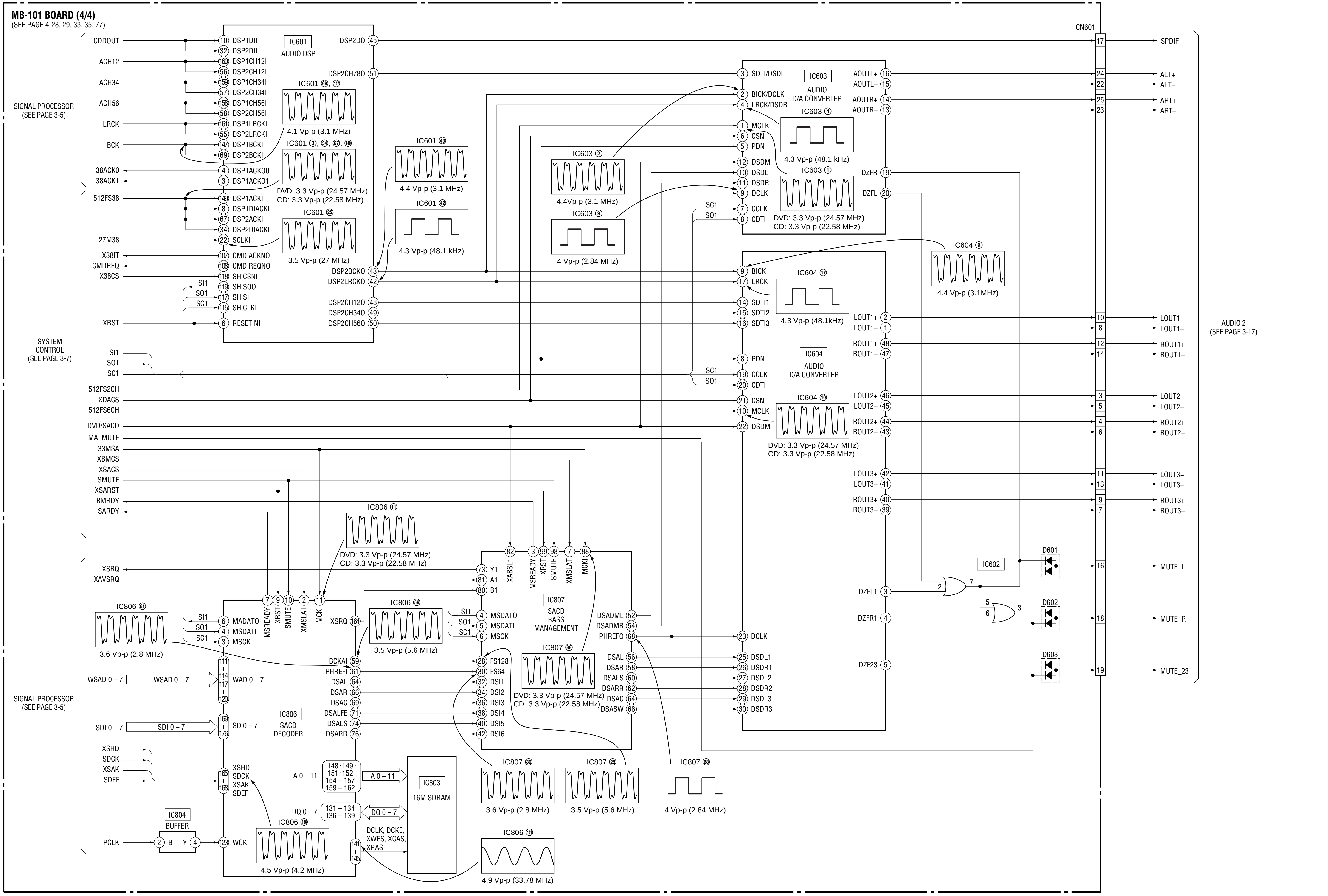
3-6. VIDEO (2) BLOCK DIAGRAM



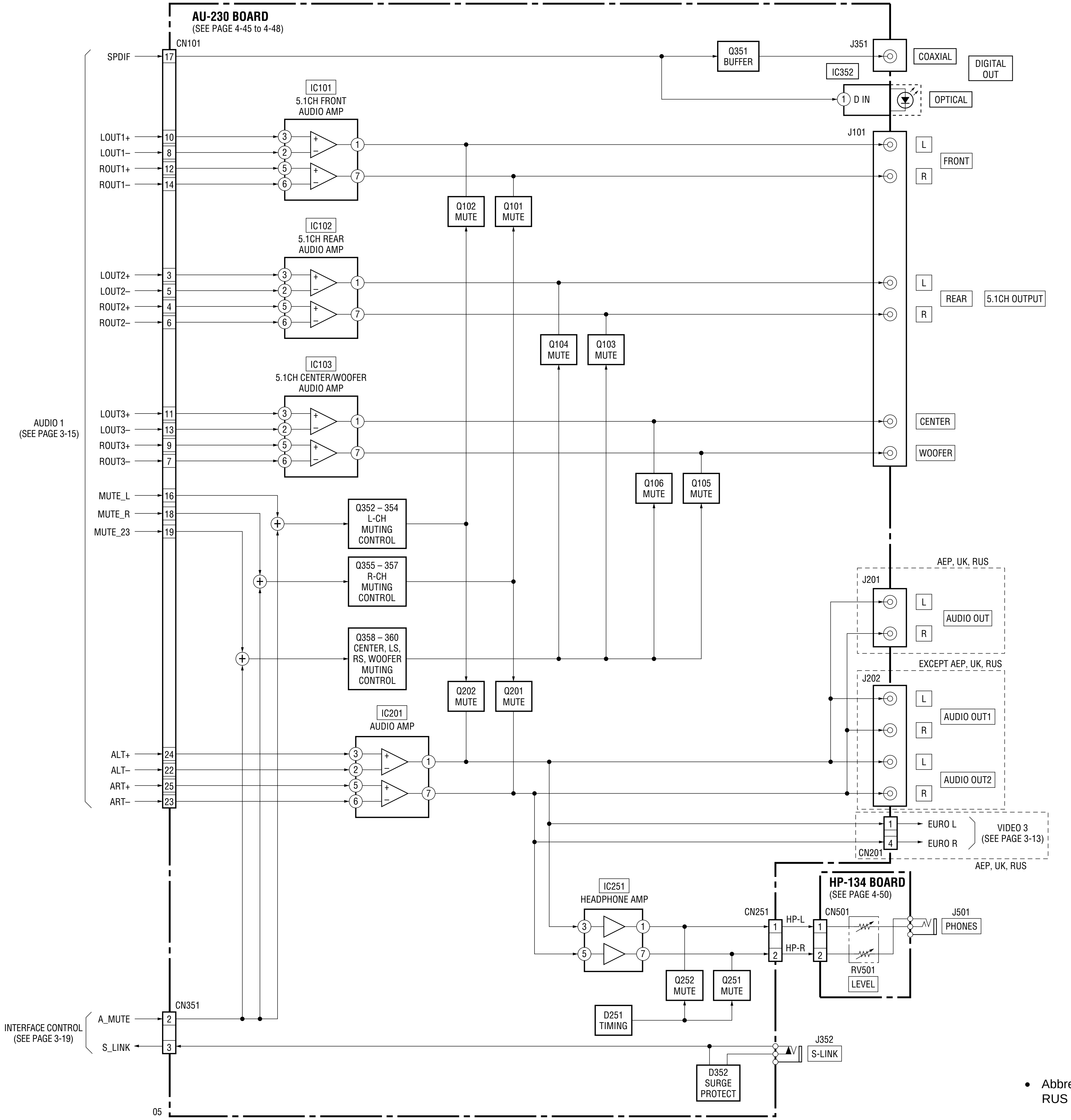
3-7. VIDEO (3) BLOCK DIAGRAM



3-8. AUDIO (1) BLOCK DIAGRAM

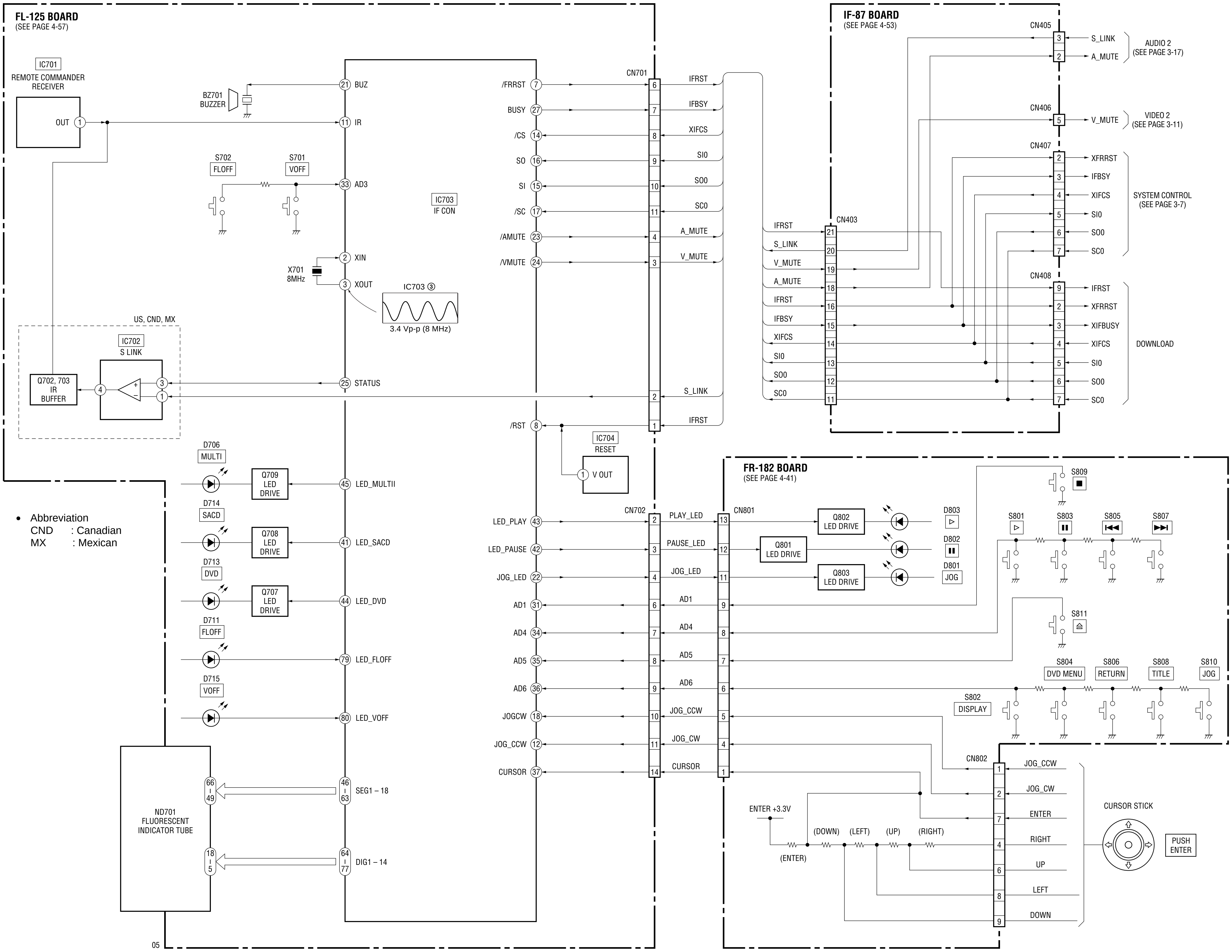


3-9. AUDIO (2) BLOCK DIAGRAM



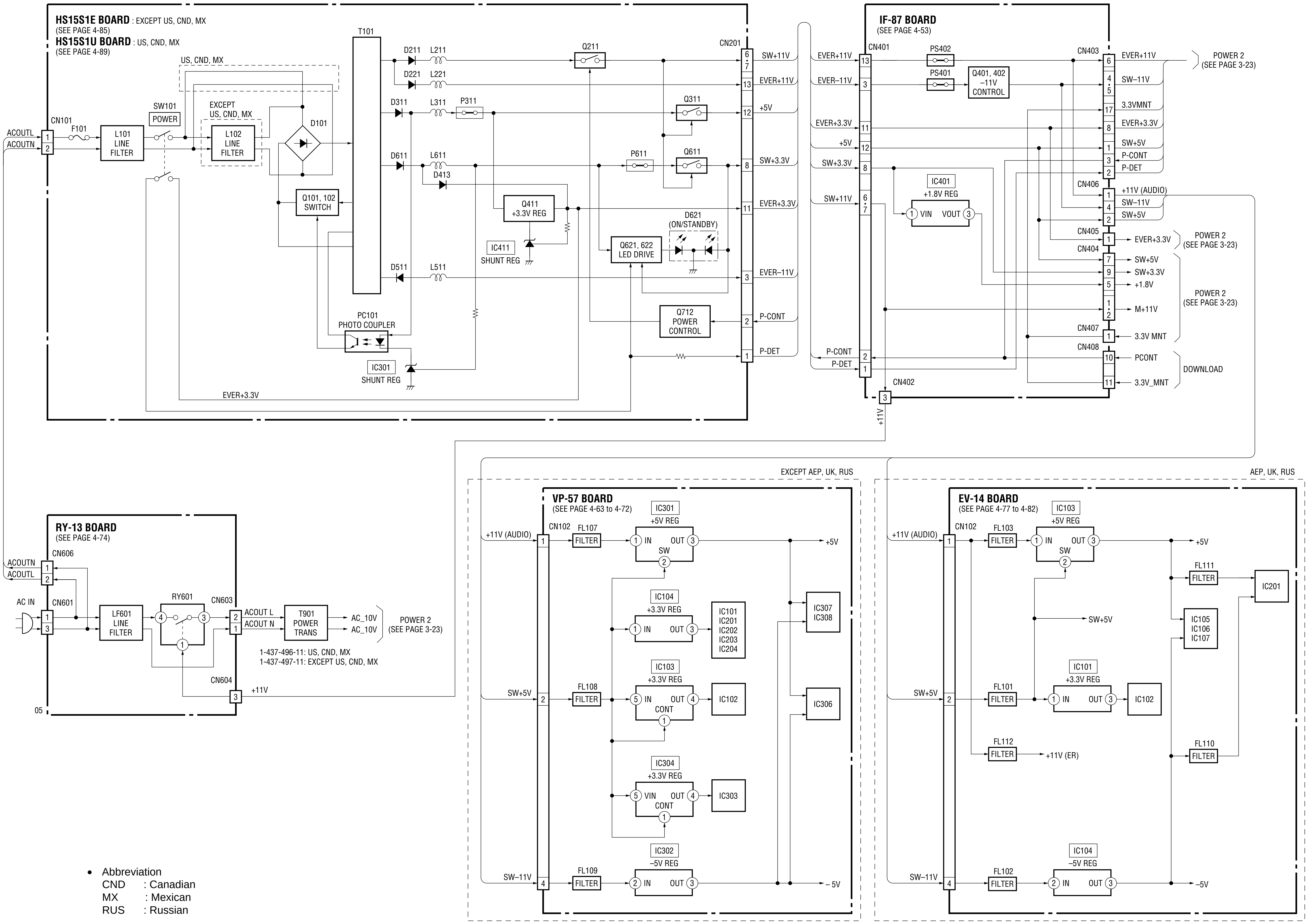
• Abbreviation
RUS : Russian

3-10. INTERFACE CONTROL BLOCK DIAGRAM



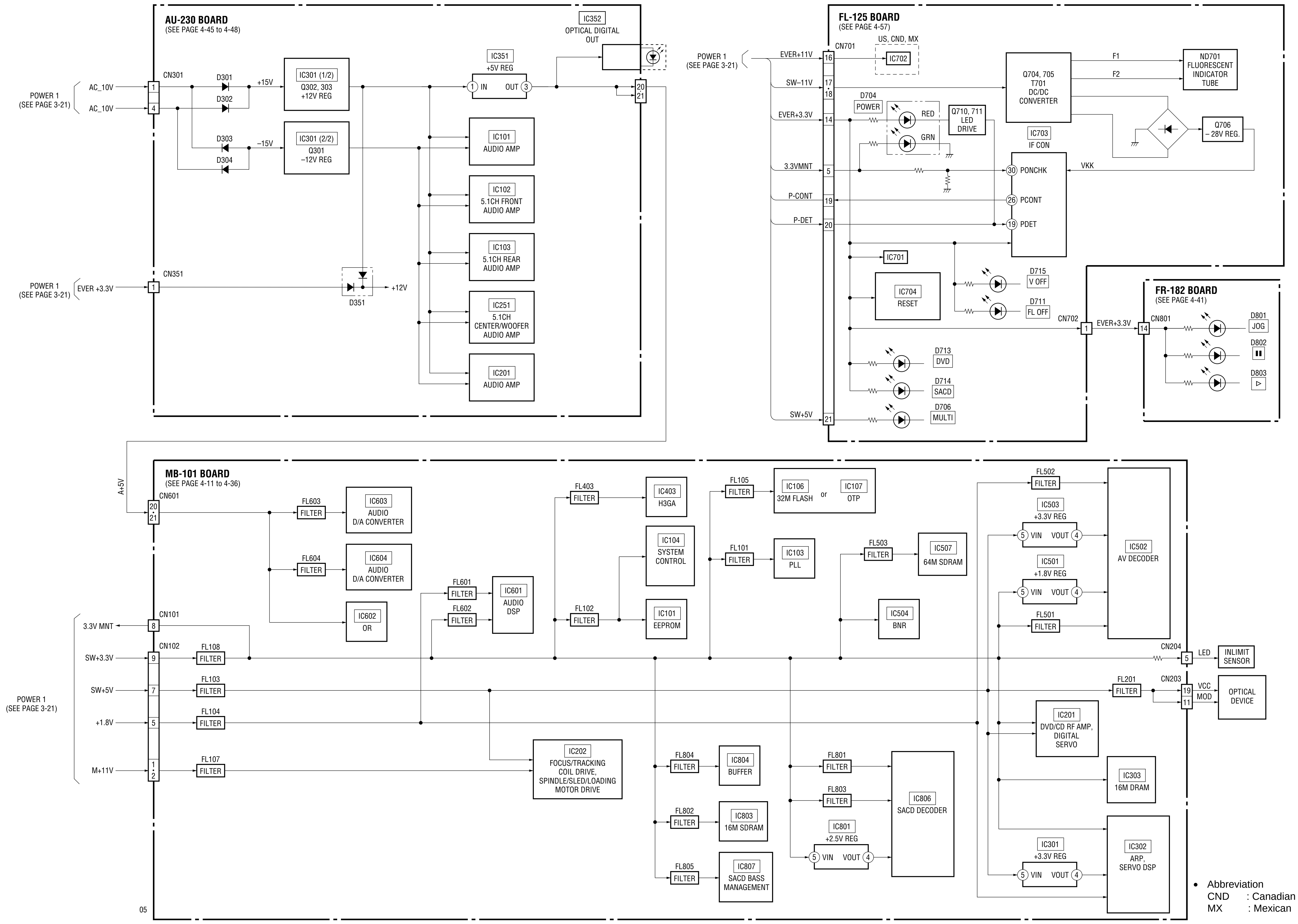
- Abbreviation
  CND : Canadian
  MX : Mexican

3-11. POWER (1) BLOCK DIAGRAM



- Abbreviation
  CND : Canadian
  MX : Mexican
  RUS : Russian

3-12. POWER (2) BLOCK DIAGRAM



• Abbreviation
CND : Canadian
MX : Mexican

SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block.)

For printed wiring boards:
- ○—— : indicates a lead wire mounted on the component side.
- ●—— : indicates a lead wire mounted on the printed side.
- ○ : Through hole.
- ░░ : Pattern from the side which enables seeing.

(The other layers' patterns are not indicated.)

Caution:	
Pattern face side: (Side A)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Side B)	Parts on the parts face side seen from the parts face are indicated.

For schematic diagram:
- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in ohms, $^1/_4$ W (Chip resistors : $^1/_{10}$ W) unless otherwise specified.
  kΩ : 1000Ω, MΩ : 1000kΩ.
- All capacitors are in μF unless otherwise noted. pF : μμF 50V or less are not indicated except for electrolytics and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- : nonflammable resistor.
- : fusible resistor.
- : panel designation.
- △ : internal component.
- : adjustment for repair.
- B + : B+ Line.
- B – : B– Line.
- Circled numbers refer to waveforms.
- Voltages are dc between measurement point.
- Readings are taken with a color-bar signal on DVD reference disc and when playing CD reference disc.
- Readings are taken with a digital multimeter (DC 10MΩ).
- Voltage variations may be noted due to normal production tolerances.

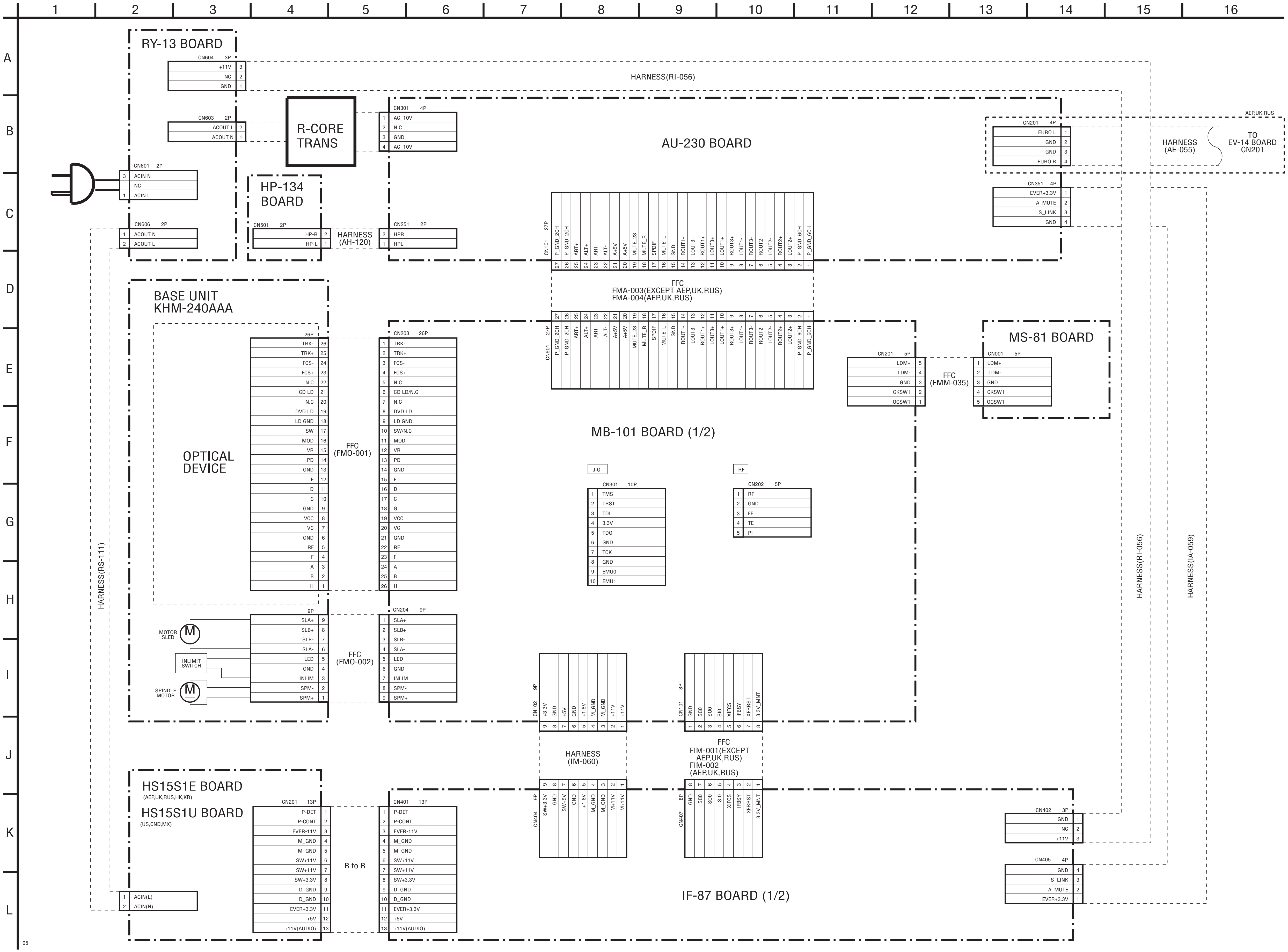
Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

- Abbreviation
  CND : Canadian
  HK : Hong Kong
  KR : Korea
  RUS : Russian
  MX : Mexican
- Description about model name
  DPX14xxBM
  - Name of production country
    M : Malaysia
    X : Mexico
  - Color of set
    B : Black
    H : Titanium gray
    N : Gold
    S : Silver

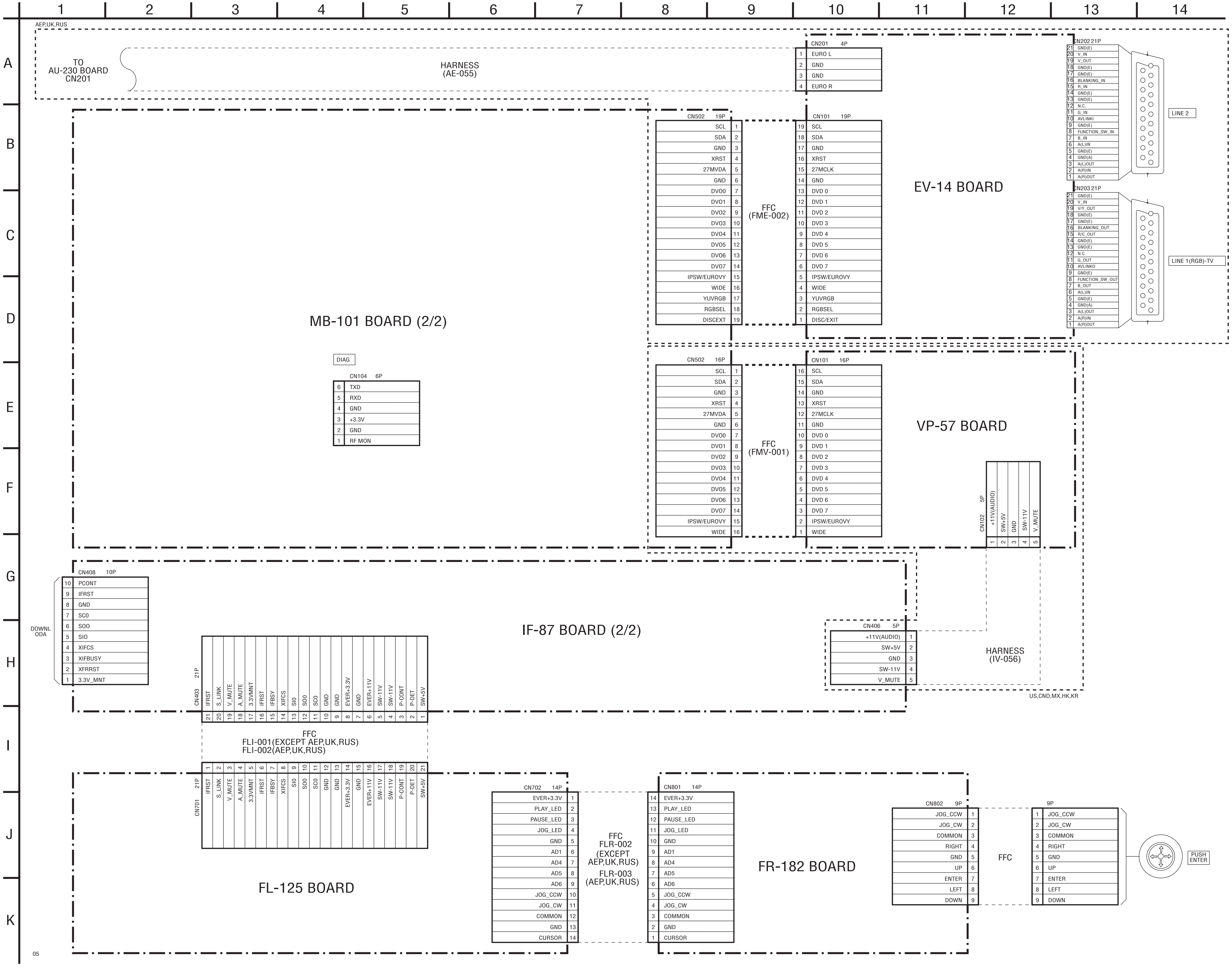
4-1. FRAME SCHEMATIC DIAGRAM

FRAME (1)



FRAME (1)

FRAME (2)



1 2 3 4 5 6 7 8 9 10 11 12 13 14
A B C D E F G H I J K
AEP,UK,RUS
TO AU-230 BOARD CN201
HARNESS (AE-055)
CN201 4P
1 EURO L
2 GND
3 GND
4 EURO R
EV-14 BOARD
CN202 21P
21 GND(E)
20 V_IN
19 V_OUT
18 GND(E)
17 GND(E)
16 BLANKING_IN
15 R_IN
14 GND(E)
13 GND(E)
12 N.C.
11 G_IN
10 AVLINKI
9 GND(E)
8 FUNCTION_SW_IN
7 B_IN
6 A(L)IN
5 GND(E)
4 GND(A)
3 A(L)OUT
2 A(R)IN
1 A(R)OUT
LINE 2
CN203 21P
21 GND(E)
20 V_IN
19 V/Y_OUT
18 GND(E)
17 GND(E)
16 BLANKING_OUT
15 R/C_OUT
14 GND(E)
13 GND(E)
12 N.C.
11 G_OUT
10 AVLINKO
9 GND(E)
8 FUNCTION_SW_OUT
7 B_OUT
6 A(L)IN
5 GND(E)
4 GND(A)
3 A(L)OUT
2 A(R)IN
1 A(R)OUT
LINE 1(RGB)-TV
MB-101 BOARD (2/2)
CN502 19P
SCL 1
SDA 2
GND 3
XRST 4
27MVDA 5
GND 6
DVO0 7
DVO1 8
DVO2 9
DVO3 10
DVO4 11
DVO5 12
DVO6 13
DVO7 14
IPSW/EUROVY 15
WIDE 16
YUVRGB 17
RGBSEL 18
DISCEXT 19
FFC (FME-002)
CN101 19P
19 SCL
18 SDA
17 GND
16 XRST
15 27MCLK
14 GND
13 DVD 0
12 DVD 1
11 DVD 2
10 DVD 3
9 DVD 4
8 DVD 5
7 DVD 6
6 DVD 7
5 IPSW/EUROVY
4 WIDE
3 YUVRGB
2 RGBSEL
1 DISC/EXIT
DIAG
CN104 6P
6 TXD
5 RXD
4 GND
3 +3.3V
2 GND
1 RF MON
CN502 16P
SCL 1
SDA 2
GND 3
XRST 4
27MVDA 5
GND 6
DVO0 7
DVO1 8
DVO2 9
DVO3 10
DVO4 11
DVO5 12
DVO6 13
DVO7 14
IPSW/EUROVY 15
WIDE 16
FFC (FMV-001)
CN101 16P
16 SCL
15 SDA
14 GND
13 XRST
12 27MCLK
11 GND
10 DVD 0
9 DVD 1
8 DVD 2
7 DVD 3
6 DVD 4
5 DVD 5
4 DVD 6
3 DVD 7
2 IPSW/EUROVY
1 WIDE
VP-57 BOARD
CN102 5P
1 +11V(AUDIO)
2 SW+5V
3 GND
4 SW-11V
5 V_MUTE
IF-87 BOARD (2/2)
CN408 10P
10 PCONT
9 IFRST
8 GND
7 SC0
6 SOO
5 SIO
4 XIFCS
3 XIFBUSY
2 XFRRST
1 3.3V_MNT
DOWNL ODA
CN406 5P
+11V(AUDIO) 1
SW+5V 2
GND 3
SW-11V 4
V_MUTE 5
HARNESS (IV-056)
US,CND,MX,HK,KR
CN403 21P
21 IFRST
20 S_LINK
19 V_MUTE
18 A_MUTE
17 3.3VMNT
16 IFRST
15 IFBSY
14 XIFCS
13 SIO
12 SO0
11 SC0
10 GND
9 GND
8 EVER+3.3V
7 GND
6 EVER+11V
5 SW-11V
4 SW-11V
3 P-CONT
2 P-DET
1 SW+5V
FFC
FLI-001(EXCEPT AEP,UK,RUS)
FLI-002(AEP,UK,RUS)
CN701 21P
1 IFRST
2 S_LINK
3 V_MUTE
4 A_MUTE
5 3.3VMNT
6 IFRST
7 IFBSY
8 XIFCS
9 SIO
10 SO0
11 SC0
12 GND
13 GND
14 EVER+3.3V
15 GND
16 EVER+11V
17 SW-11V
18 SW-11V
19 P-CONT
20 P-DET
21 SW+5V
FL-125 BOARD
CN702 14P
EVER+3.3V 1
PLAY_LED 2
PAUSE_LED 3
JOG_LED 4
GND 5
AD1 6
AD4 7
AD5 8
AD6 9
JOG_CCW 10
JOG_CW 11
COMMON 12
GND 13
CURSOR 14
FFC
FLR-002 (EXCEPT AEP,UK,RUS)
FLR-003 (AEP,UK,RUS)
CN801 14P
14 EVER+3.3V
13 PLAY_LED
12 PAUSE_LED
11 JOG_LED
10 GND
9 AD1
8 AD4
7 AD5
6 AD6
5 JOG_CCW
4 JOG_CW
3 COMMON
2 GND
1 CURSOR
FR-182 BOARD
CN802 9P
JOG_CCW 1
JOG_CW 2
COMMON 3
RIGHT 4
GND 5
UP 6
ENTER 7
LEFT 8
DOWN 9
FFC
9P
1 JOG_CCW
2 JOG_CW
3 COMMON
4 RIGHT
5 GND
6 UP
7 ENTER
8 LEFT
9 DOWN
PUSH ENTER
05

4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

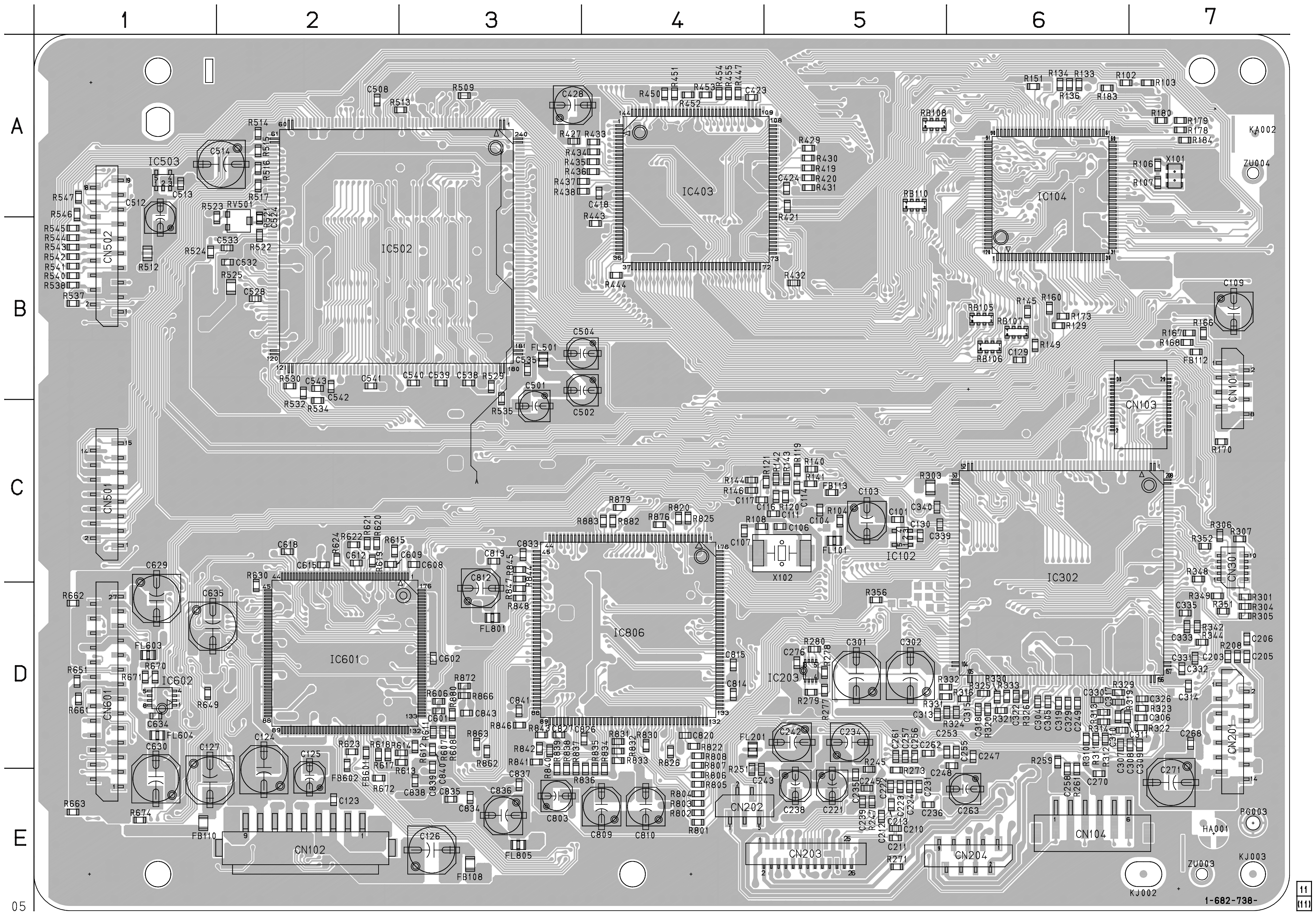
There are a few cases that the part isn't mounted in this model is printed on this diagram.

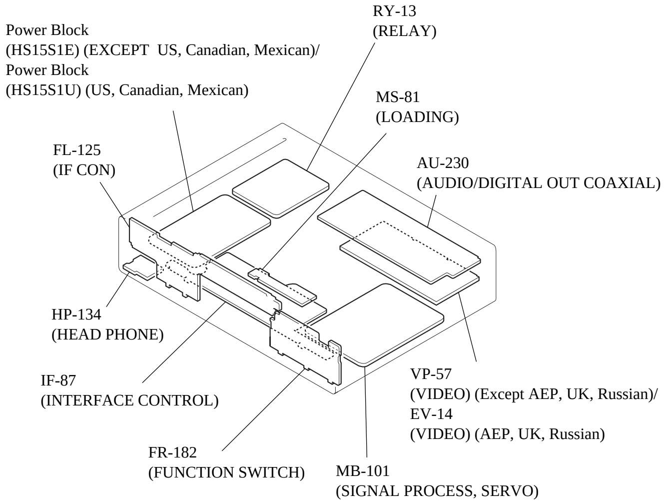
MB-101 (SIGNAL PROCESS, SERVO) PRINTED WIRING BOARD

– Ref. No.: MB-101 board; 2,000 series –

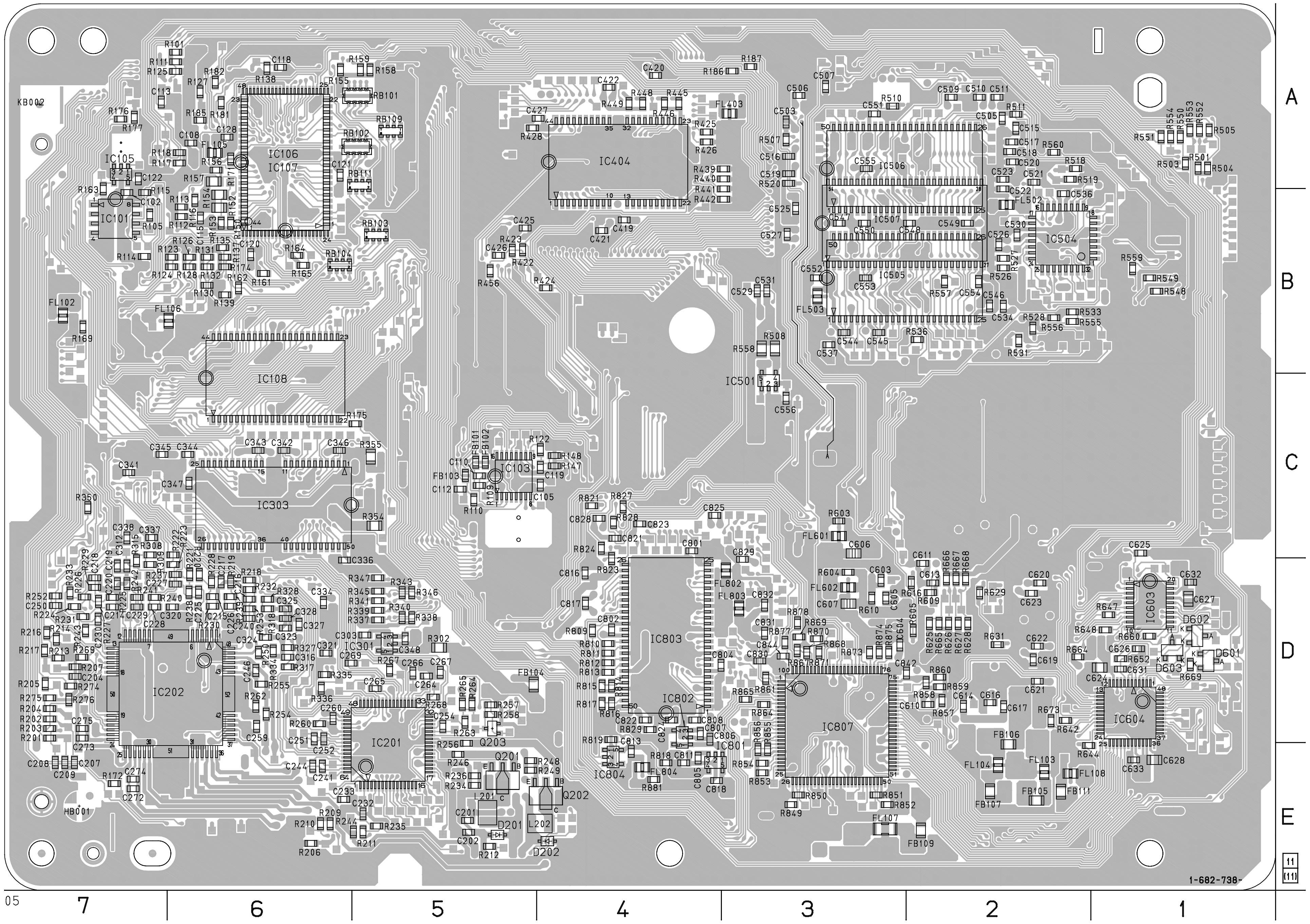
MB-101 BOARD (SIDE A)

CN101	B-7
CN102	E-2
CN103	C-6
CN104	E-6
CN201	D-7
CN203	E-5
CN204	E-6
CN501	C-1
CN601	D-1
IC104	A-6
IC302	D-6
IC403	B-4
IC502	B-2
IC503	A-1
IC601	D-2
IC602	D-1
IC806	D-4
RV501	B-2





MB-101 BOARD(SIDE B)



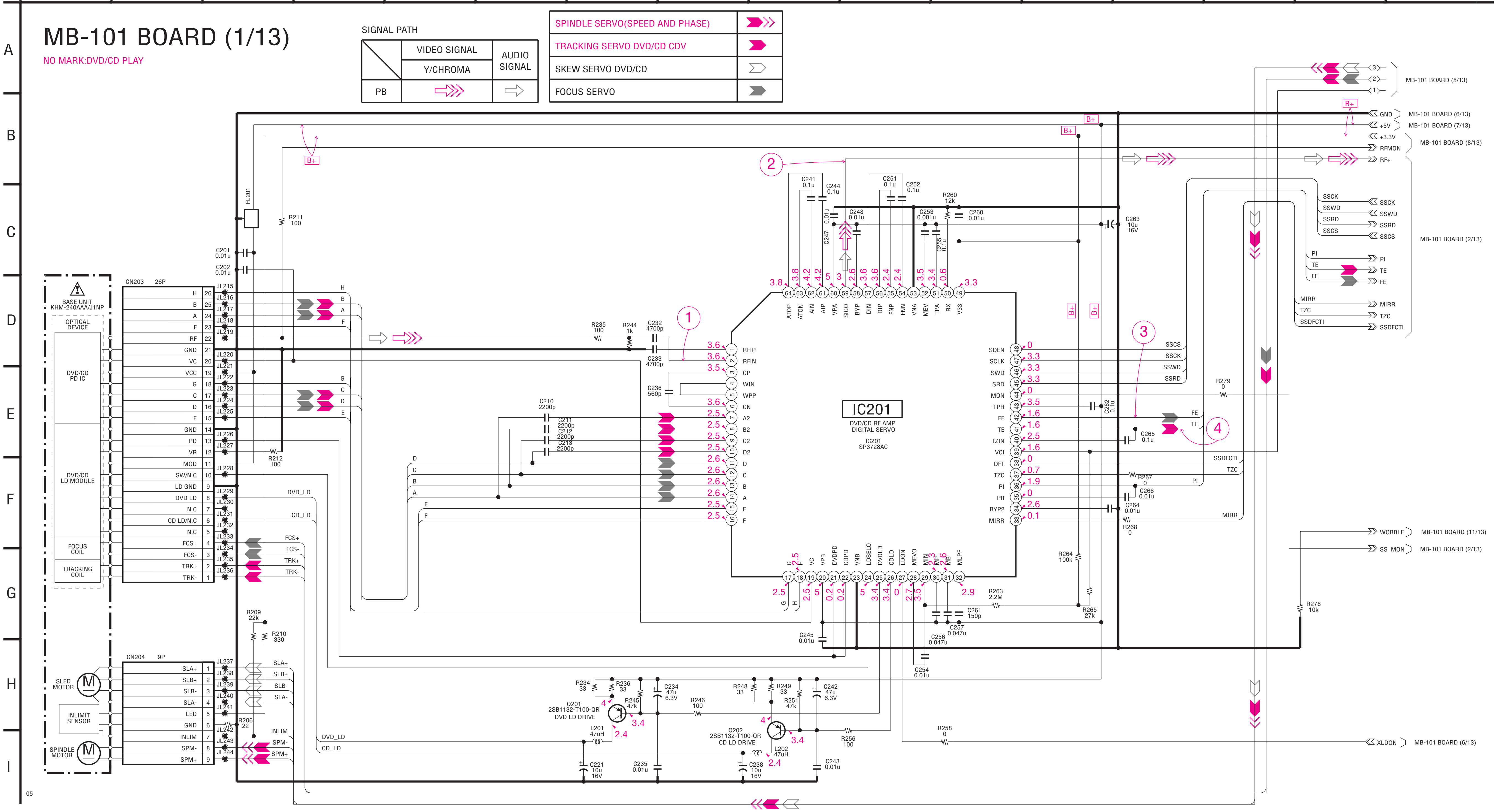
MB-101 BOARD (SIDE B)

D601	D-1
D602	D-1
D603	D-1
IC101	B-7
IC103	C-5
IC106	A-6
IC107	A-6
IC201	D-5
IC202	D-7
IC301	D-5
IC303	C-6
IC501	C-3
IC504	B-2
IC507	B-3
IC603	D-1
IC604	D-1
IC801	E-4
IC803	D-4
IC804	E-4
IC807	D-3
Q201	E-5
Q202	E-4

MB-101 (RF AMP, SERVO) SCHEMATIC DIAGRAM • See page 4-7 for printed wiring board.

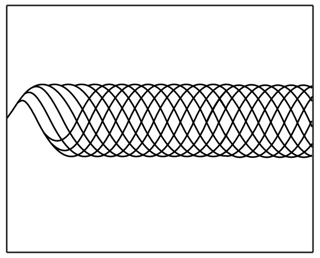
– Ref. No.: MB-101 board; 2,000 series –

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.



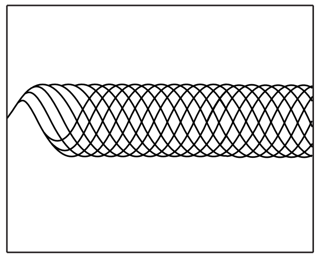
• Waveforms

❶ IC201 ② (DVD play)
200 mV/DIV 50 ns/DIV



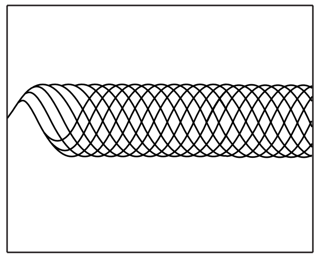
570 mVp-p

❶ IC201 ② (CD play)
200 mV/DIV 200 ns/DIV



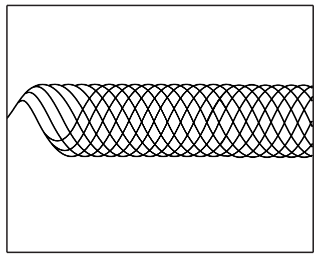
550 mVp-p

❷ IC201 ㊾ (DVD play)
500 mV/DIV 50 ns/DIV



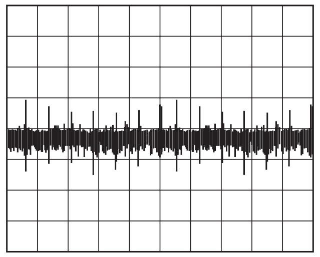
1.4 Vp-p

❷ IC201 ㊾ (CD play)
500 mV/DIV 200 ns/DIV



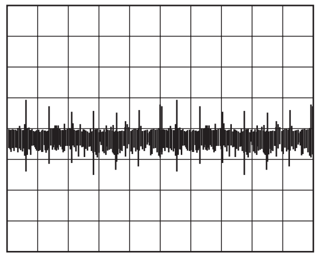
1.4 Vp-p

❸ IC201 ㊷ (DVD play)
100 mV/DIV 50 ms/DIV



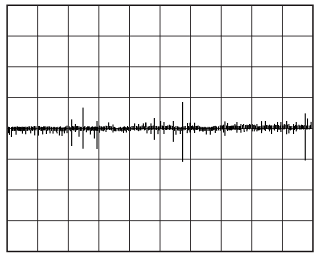
180 mVp-p

❸ IC201 ㊷ (CD play)
500 mV/DIV 50 ms/DIV



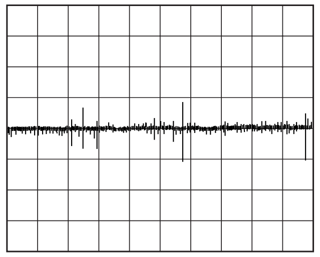
860 mVp-p

❹ IC201 ㊶ (DVD play)
500 mV/DIV 50 ms/DIV



1.5 Vp-p

❹ IC201 ㊶ (CD play)
500 mV/DIV 200 ms/DIV

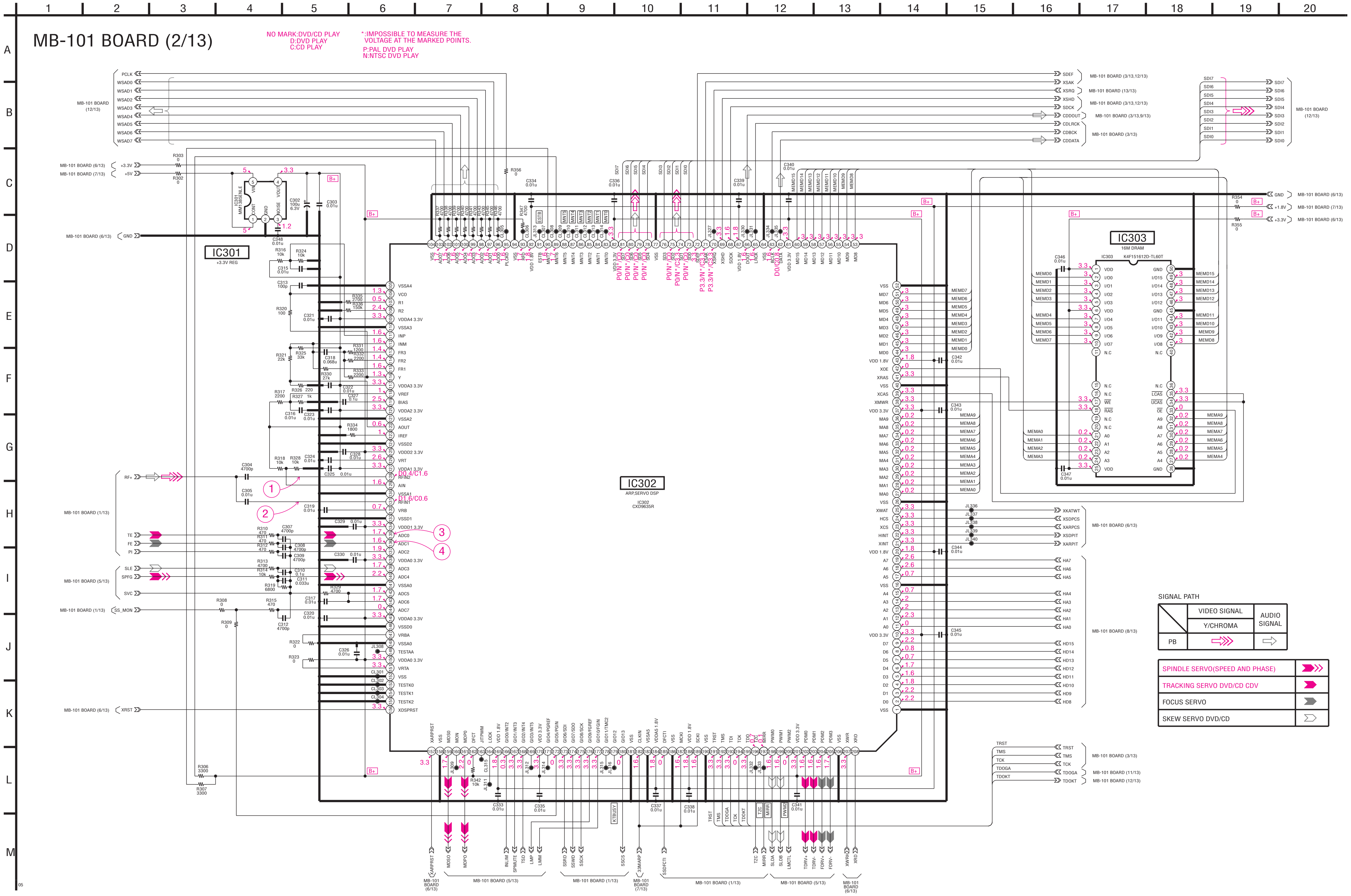


1.7 Vp-p

MB-101 (ARP, SERVO DSP) SCHEMATIC DIAGRAM • See page 4-7 for printed wiring board.

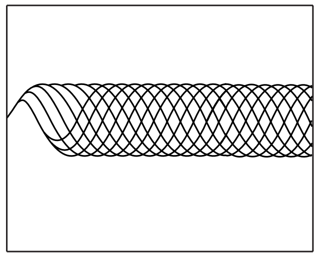
• See page 4-7 for printed wiring board.

– Ref. No.: MB-101 board; 2,000 series –



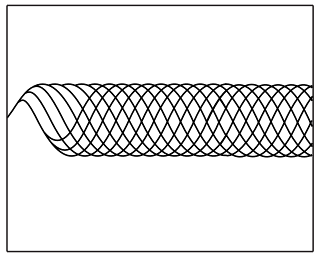
• Waveforms

❶ IC302 ⑫⑧ (CD play)
500 mV/DIV 200 ns/DIV



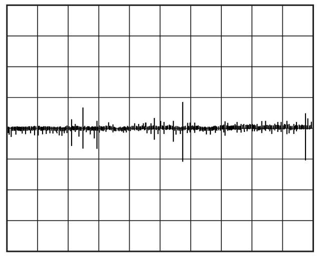
1.4 Vp-p

❷ IC302 ⑬① (DVD play)
500 mV/DIV 100 ns/DIV



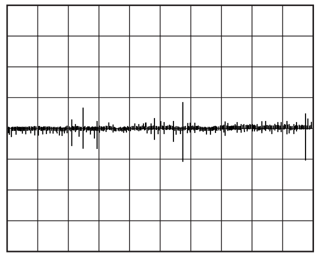
1.4 Vp-p

❸ IC302 ⑬⑤ (DVD play)
500 mV/DIV 50 ms/DIV



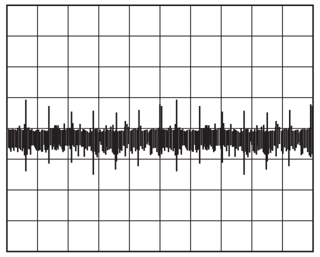
1.4 Vp-p

❸ IC302 ⑬⑤ (CD play)
500 mV/DIV 200 ms/DIV



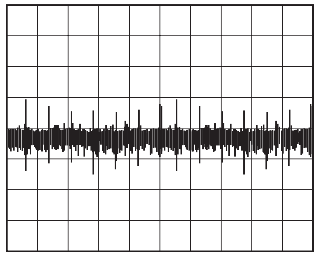
1.7 Vp-p

❹ IC302 ⑬⑥ (DVD play)
100 mV/DIV 50 ms/DIV



160 mVp-p

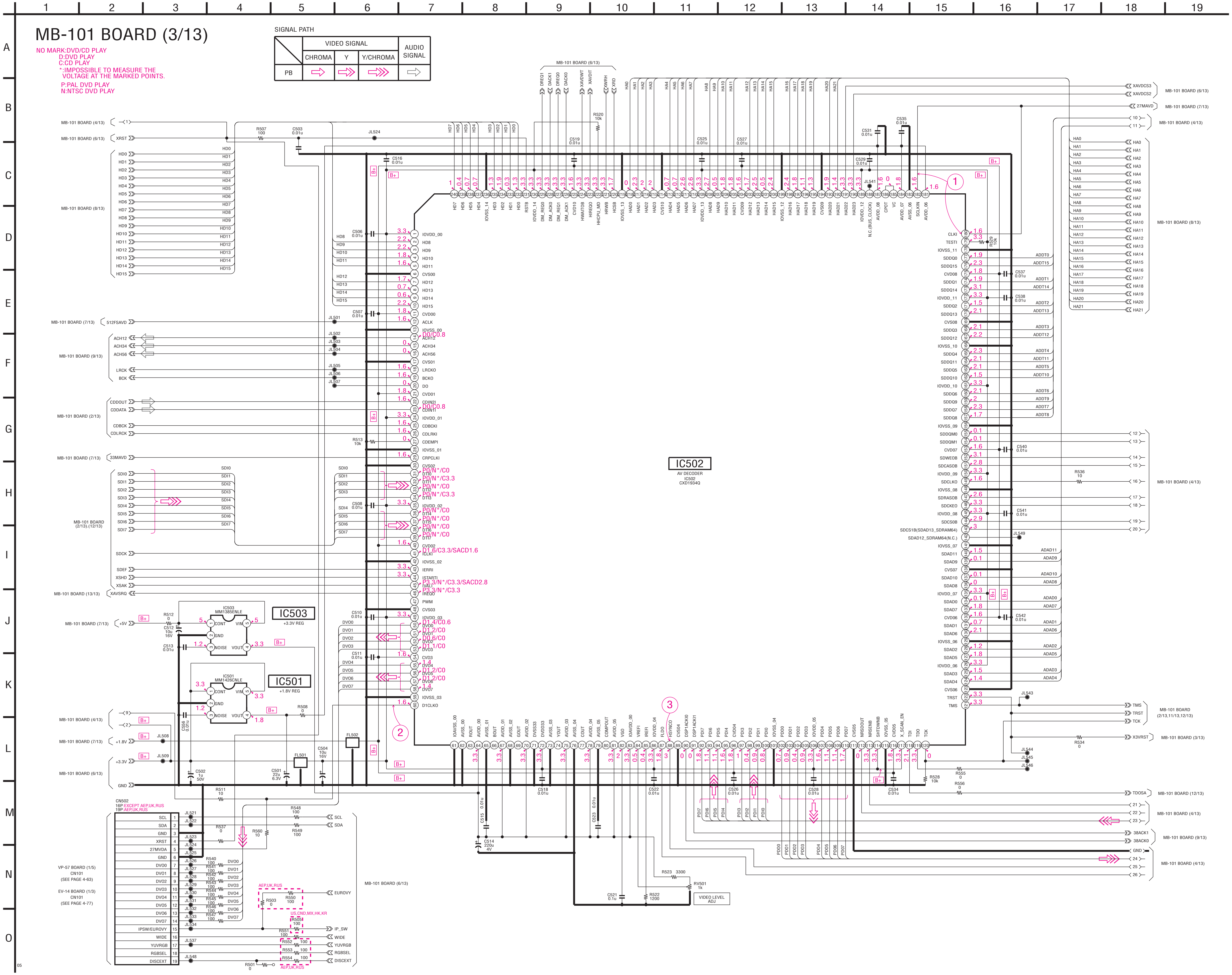
❹ IC302 ⑬⑥ (CD play)
500 mV/DIV 50 ms/DIV



860 mVp-p

MB-101 (AV DECODER) SCHEMATIC DIAGRAM • See page 4-7 for printed wiring board.

– Ref. No.: MB-101 board; 2,000 series –

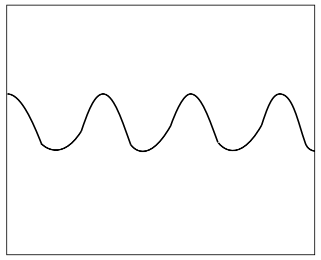


MB-101 (BNR) SCHEMATIC DIAGRAM • See page 4-7 for printed wiring board.

– Ref. No.: MB-101 board; 2,000 series –

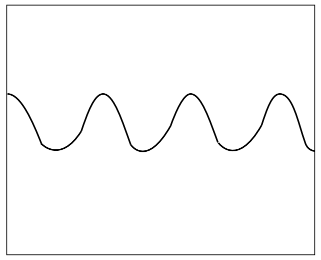
• Waveforms

❶ IC502 ⑱, ⑱



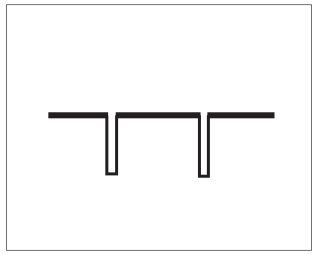
3.4 Vp-p (27 MHz)

❷ IC502 ⑥

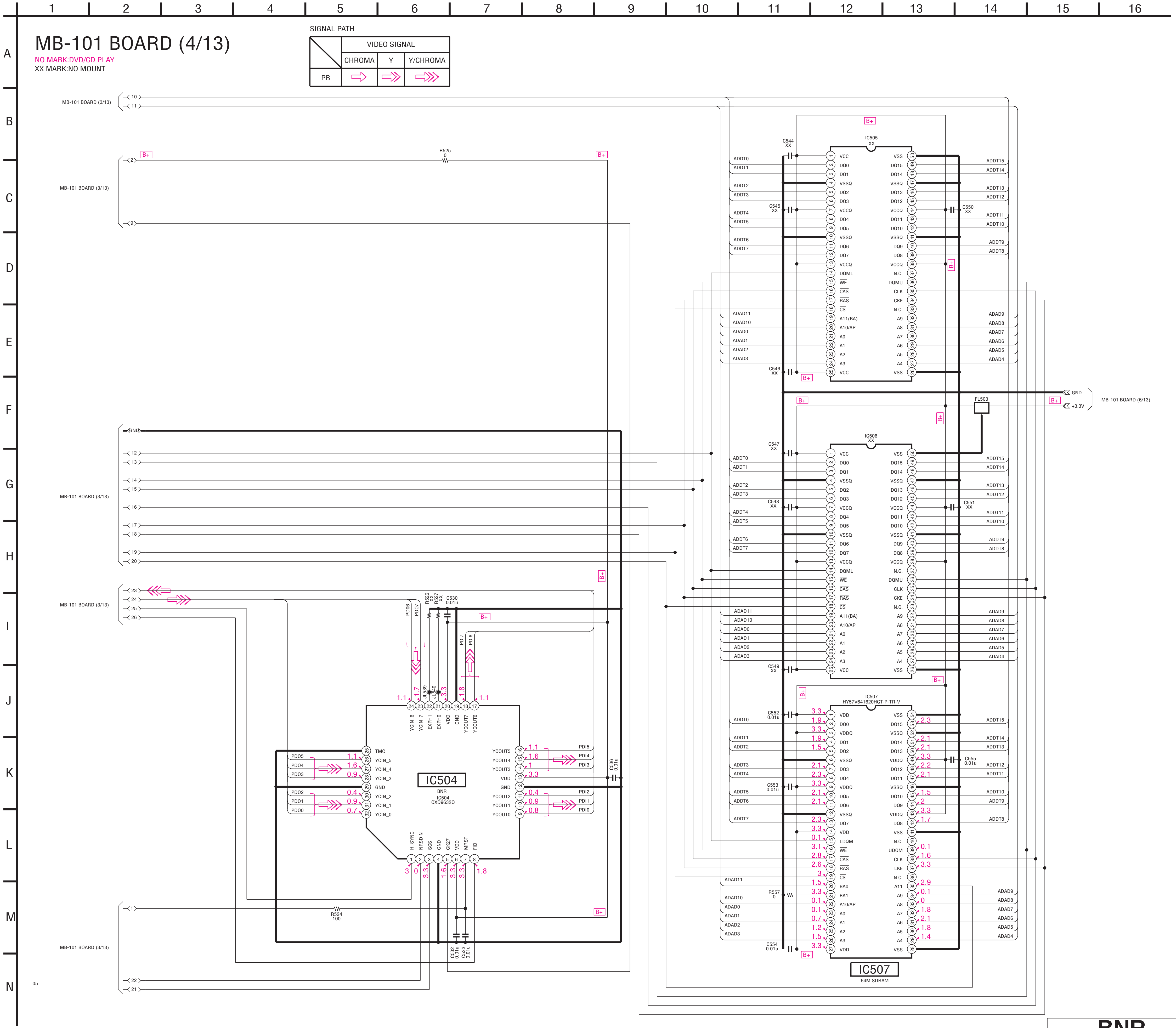


3.5 Vp-p (27 MHz)

❸ IC502 ⑧

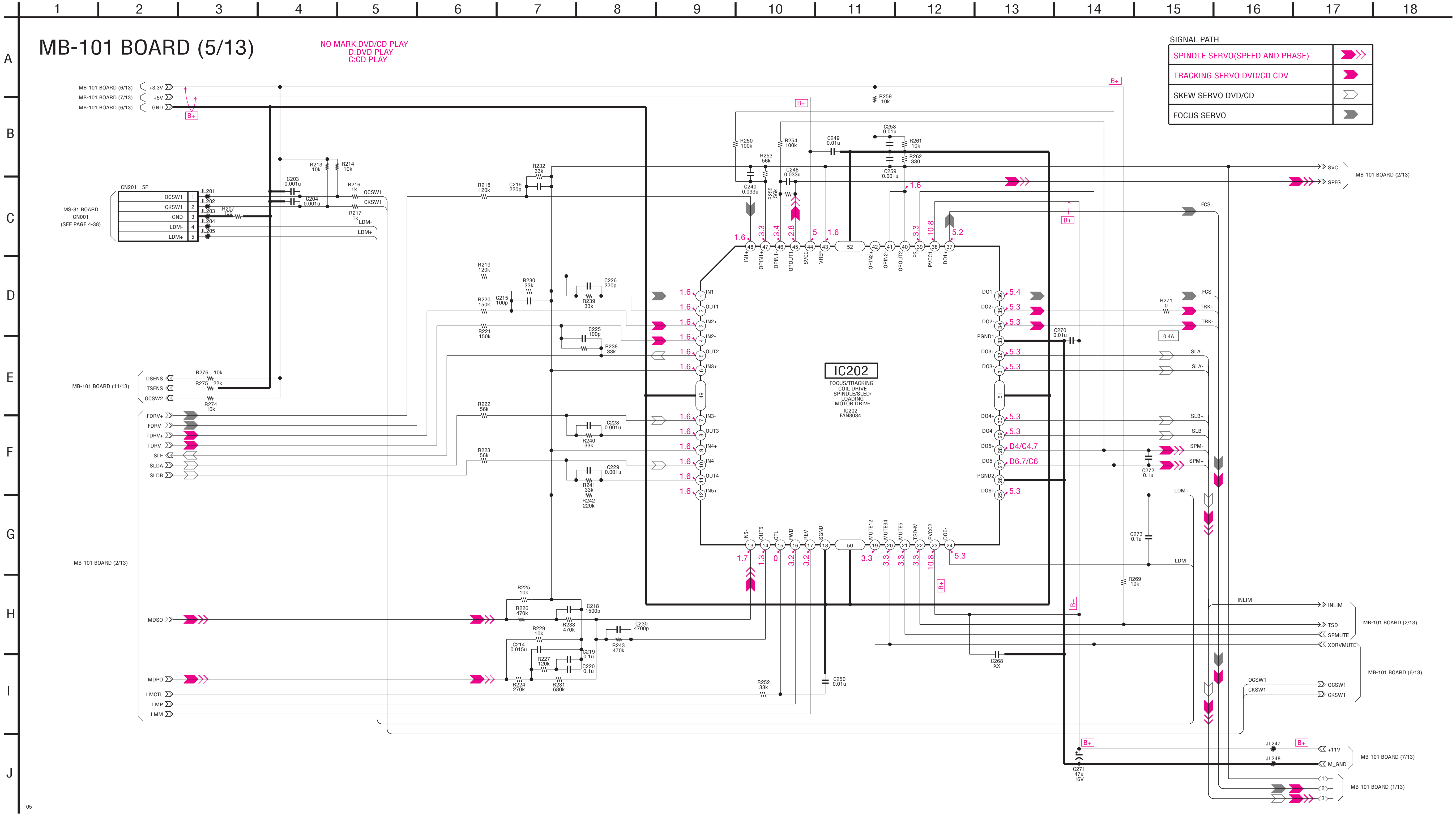


3.2 Vp-p (H)



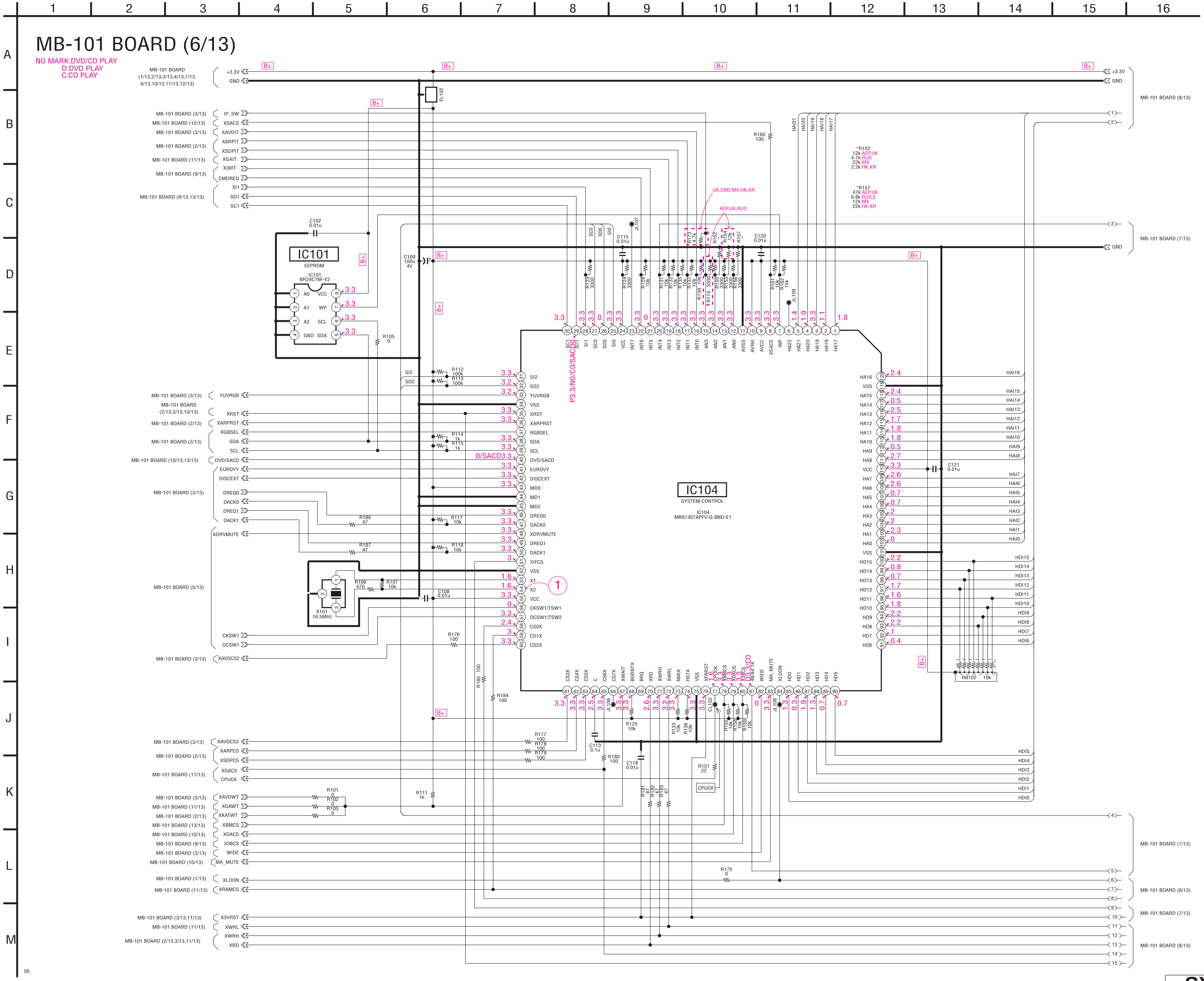
MB-101 (DRIVE) SCHEMATIC DIAGRAM • See page 4-7 for printed wiring board.

– Ref. No.: MB-101 board; 2,000 series –



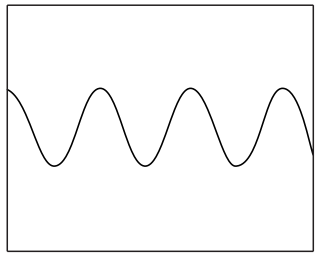
MB-101 (SYSTEM CONTROL) SCHEMATIC DIAGRAM • See page 4-7 for printed wiring board.

– Ref. No.: MB-101 board; 2,000 series –



• Waveform

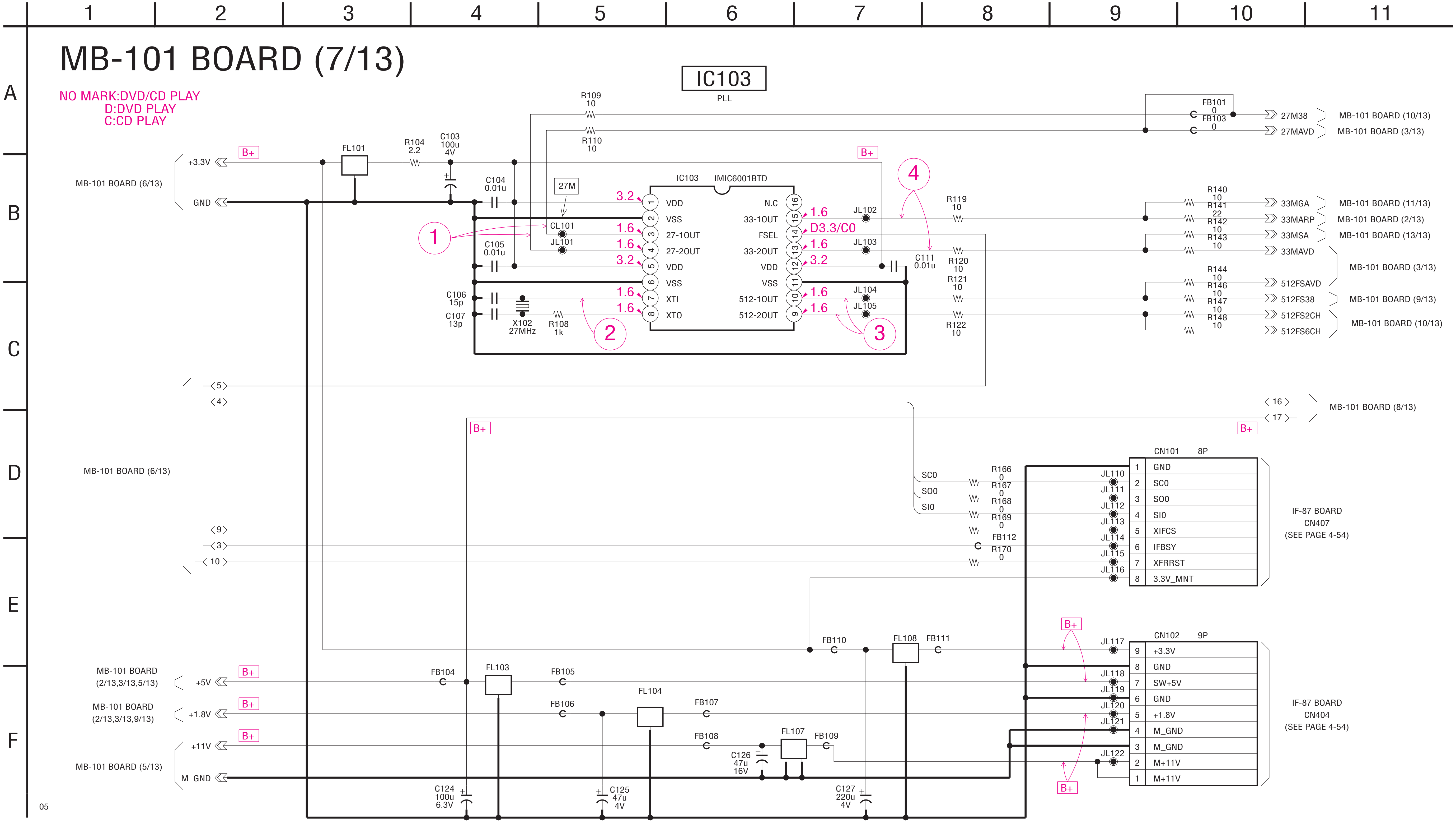
❶ IC104 ㊹



1.7 Vp-p (16.5 MHz)

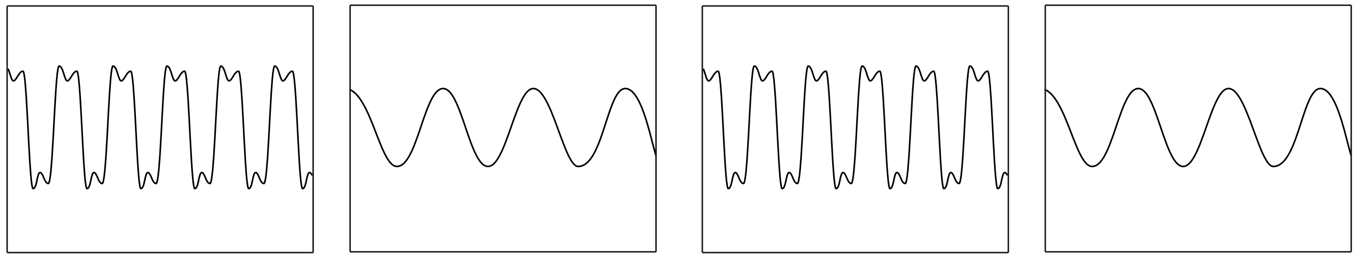
MB-101 (CLOCK GENERATOR) SCHEMATIC DIAGRAM • See page 4-7 for printed wiring board.

– Ref. No.: MB-101 board; 2,000 series –



• **Waveforms**

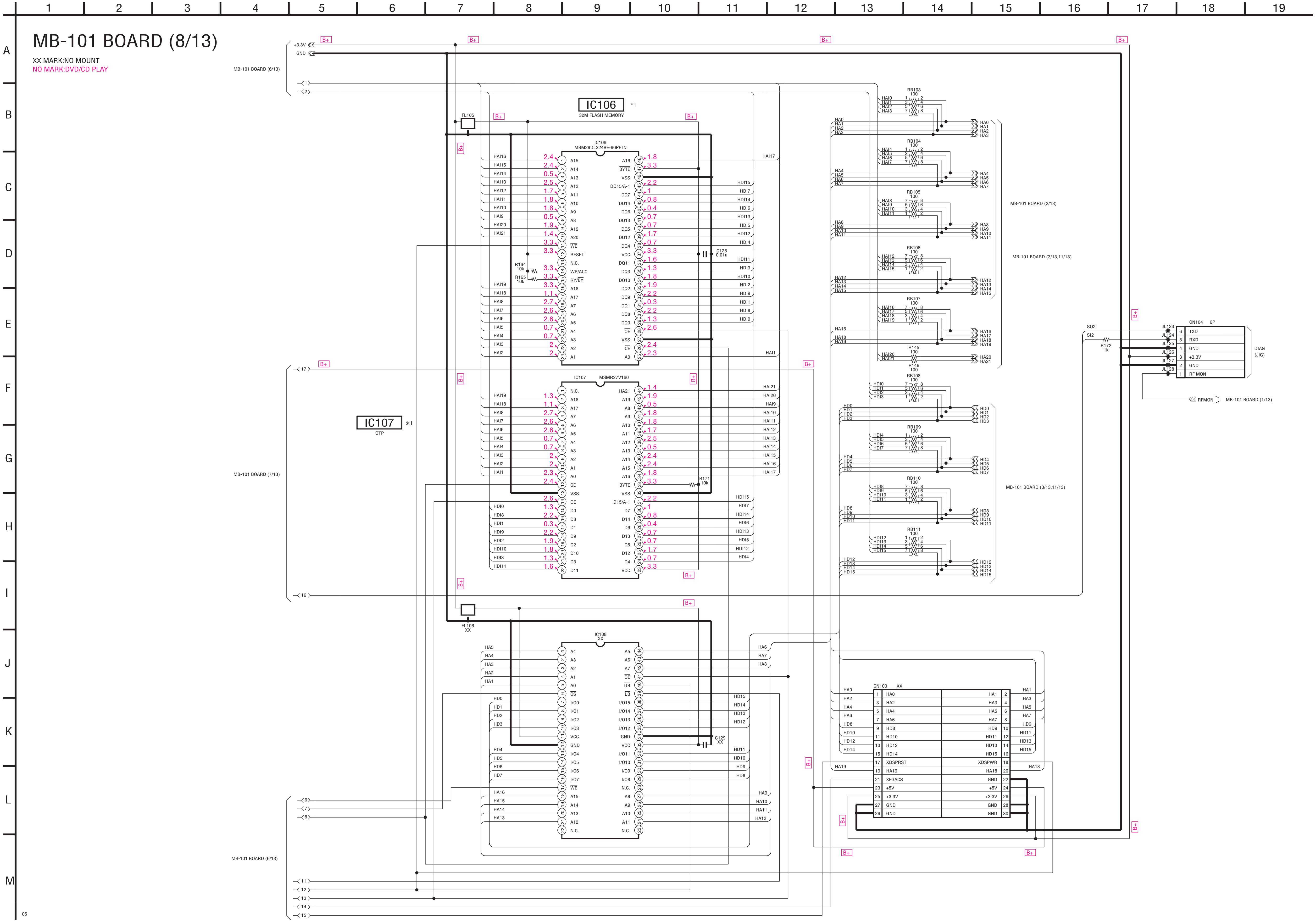
❶ IC103 ③, ④ ❷ IC103 ⑦ ❸ IC103 ⑨, ⑩ ❹ IC103 ⑬, ⑮



3.5 Vp-p (27 MHz) 1.5 Vp-p (27 MHz) DVD : 3.3 Vp-p (24.57 MHz) CD : 3.3 Vp-p (22.58 MHz) 3.2 Vp-p (33.87 MHz)

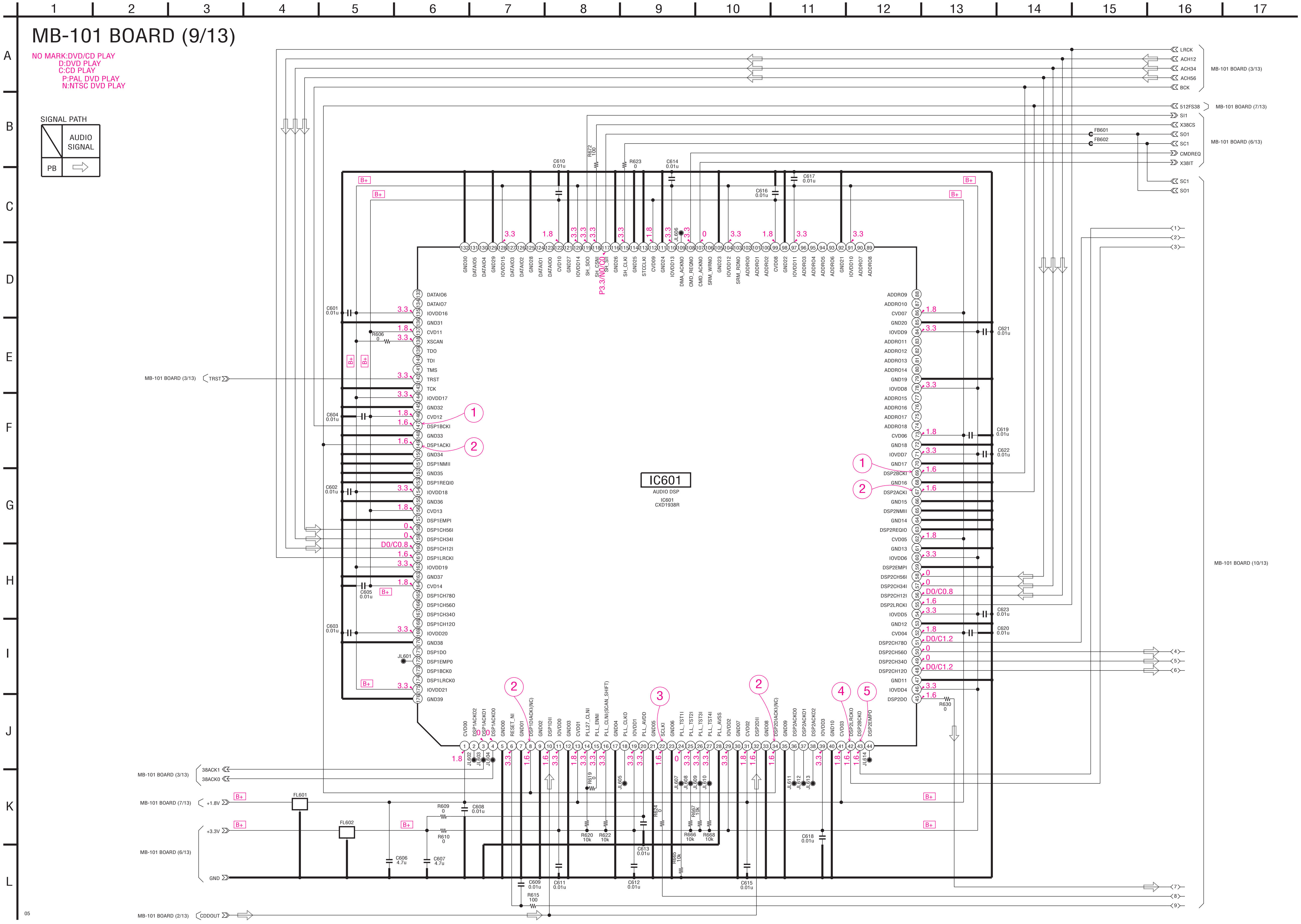
MB-101 (FLASH MEMORY, OTP) SCHEMATIC DIAGRAM • **See page 4-7 for printed wiring board.**
– Ref. No.: MB-101 board; 2,000 series –

*1: Either IC106 or IC107 is used.



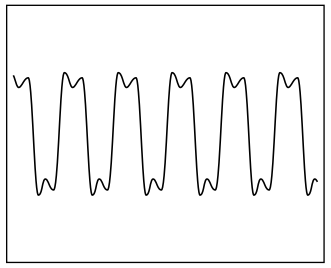
MB-101 (AUDIO DSP) SCHEMATIC DIAGRAM • See page 4-7 for printed wiring board.

– Ref. No.: MB-101 board; 2,000 series –



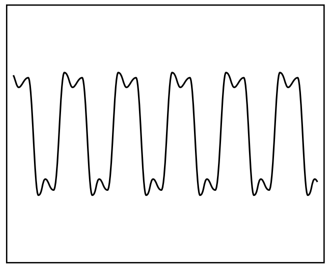
• Waveforms

❶ IC601 (69), (147)



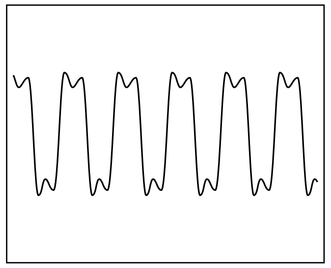
4.1 Vp-p (3.1 MHz)

❷ IC601 (8), (34), (67), (148)



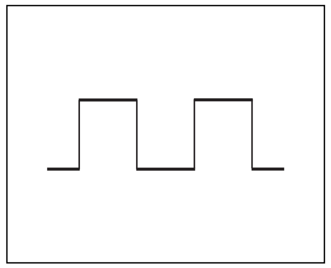
DVD: 3.3 Vp-p (24.57 MHz)
CD: 3.3 Vp-p (22.58 MHz)

❸ IC601 (22)



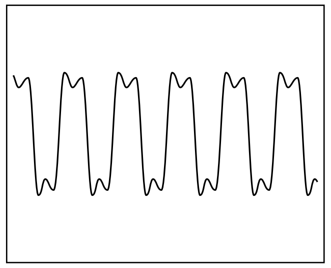
3.5 Vp-p (27 MHz)

❹ IC601 (42)



4.3 Vp-p (48.1 kHz)

❺ IC601 (43)

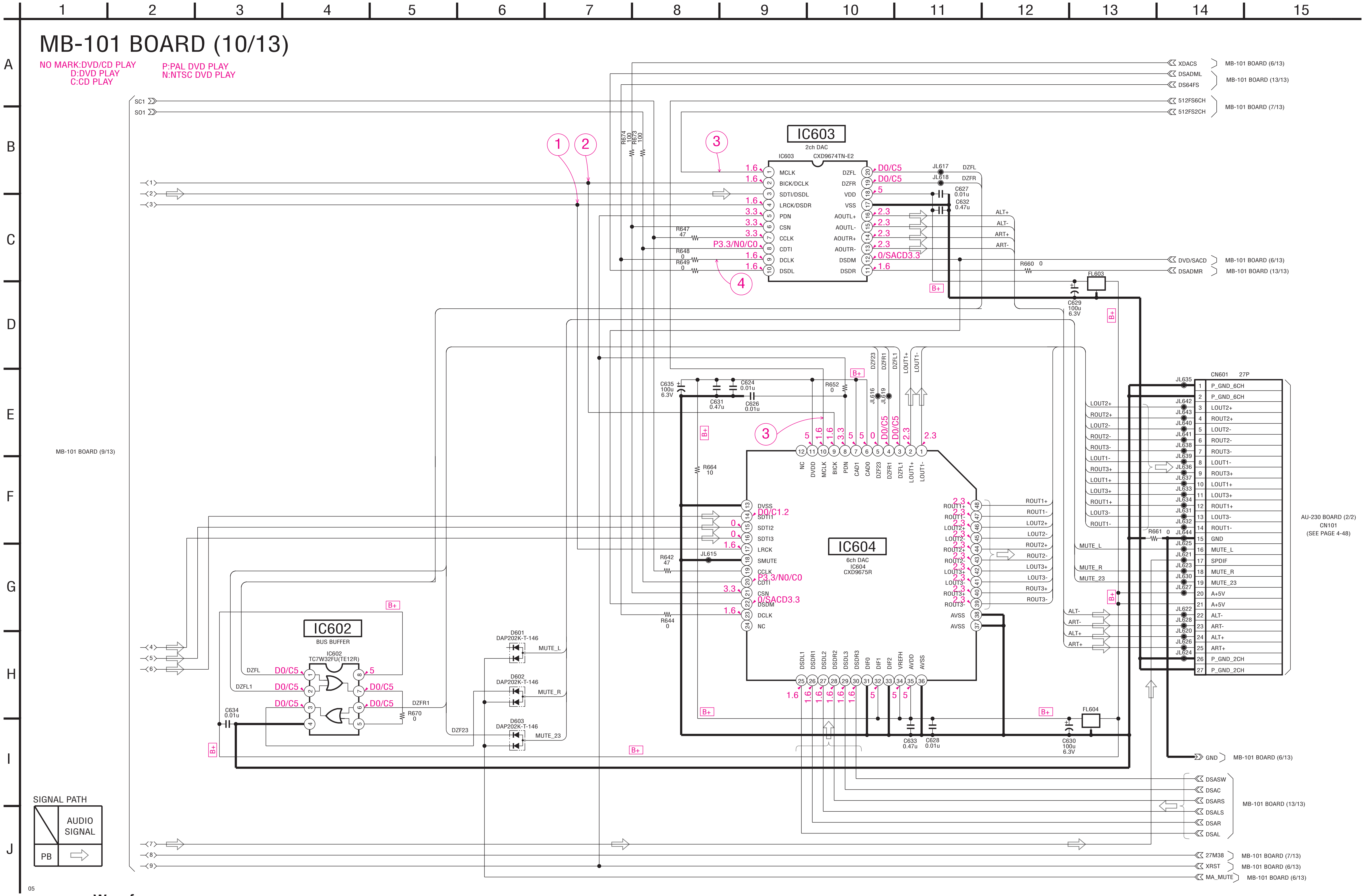


4.4 Vp-p (3.1 MHz)

AUDIO DSP
MB-101 (9/13)

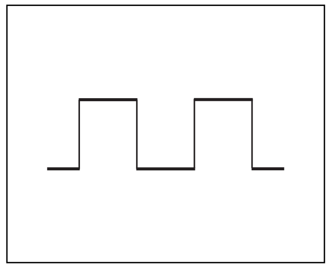
MB-101 (2ch/6ch DAC) SCHEMATIC DIAGRAM • See page 4-7 for printed wiring board.

– Ref. No.: MB-101 board; 2,000 series –



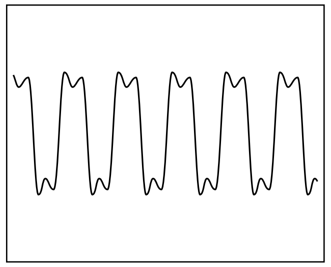
• Waveforms

❶ IC603 ④, IC604 ⑰



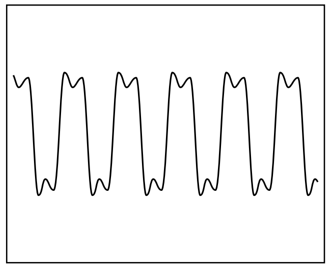
4.3 Vp-p (48.1 kHz)

❷ IC603 ②, IC604 ⑨



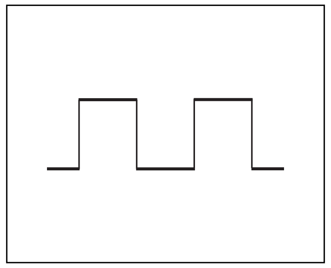
4.4 Vp-p (3.1 MHz)

❸ IC603 ①, IC604 ⑩



DVD: 3.3 Vp-p (24.57 MHz)
CD: 3.3 Vp-p (22.58 MHz)

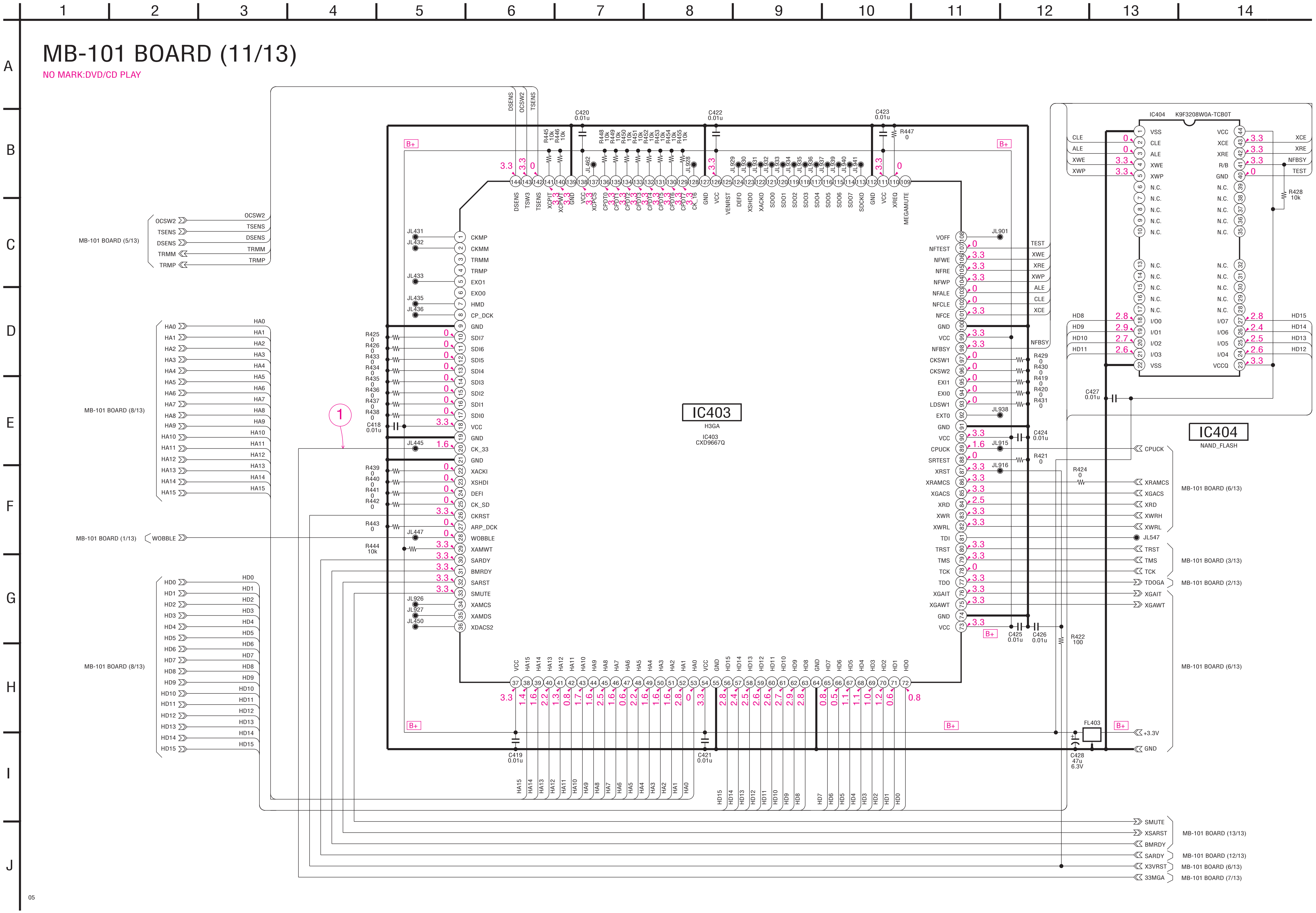
❹ IC603 ⑨



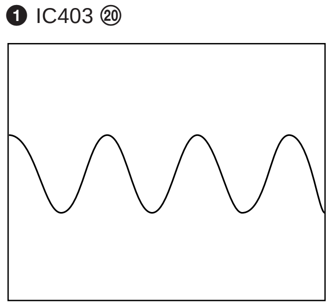
4 Vp-p (2.84 MHz)

MB-101 (H3GA) SCHEMATIC DIAGRAM • **See page 4-7 for printed wiring board.**

– Ref. No.: MB-101 board; 2,000 series –



• **Waveforms**

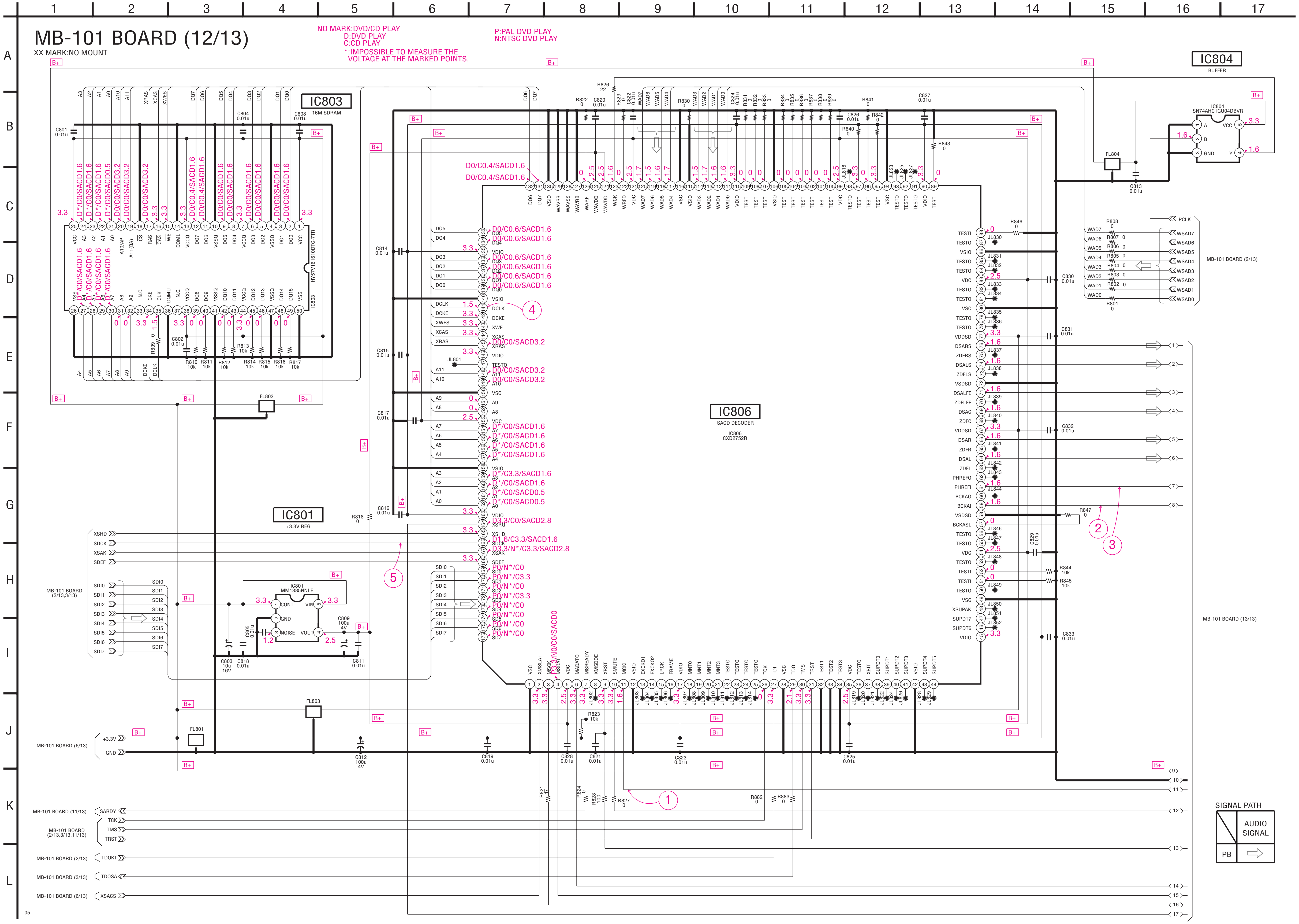


3.2 Vp-p (33.87 MHz)

H3GA
MB-101 (11/13)

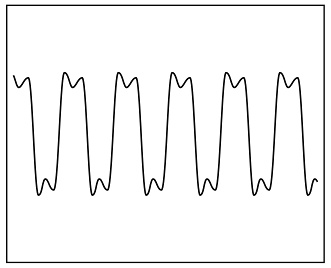
MB-101 (SACD DECODER) SCHEMATIC DIAGRAM • See page 4-7 for printed wiring board.

– Ref. No.: MB-101 board; 2,000 series –



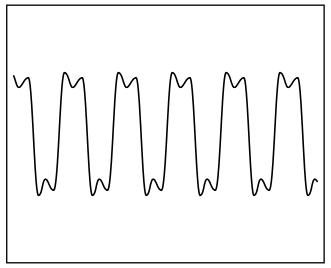
• **Waveforms**

1 IC806 (11)



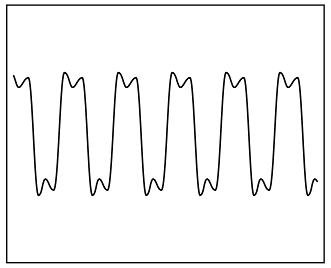
DVD: 3.3 Vp-p (24.57 MHz)
CD: 3.3 Vp-p (22.58 MHz)

2 IC806 (59)



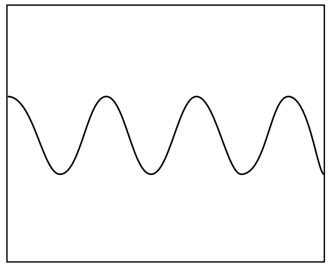
3.5 Vp-p (5.6 MHz)

3 IC806 (61)



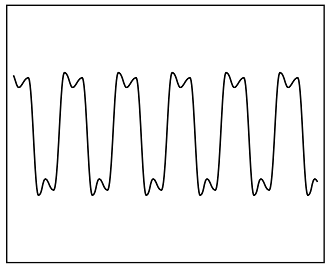
3.6 Vp-p (2.8 MHz)

4 IC806 (141)



4.9 Vp-p (33.78 MHz)

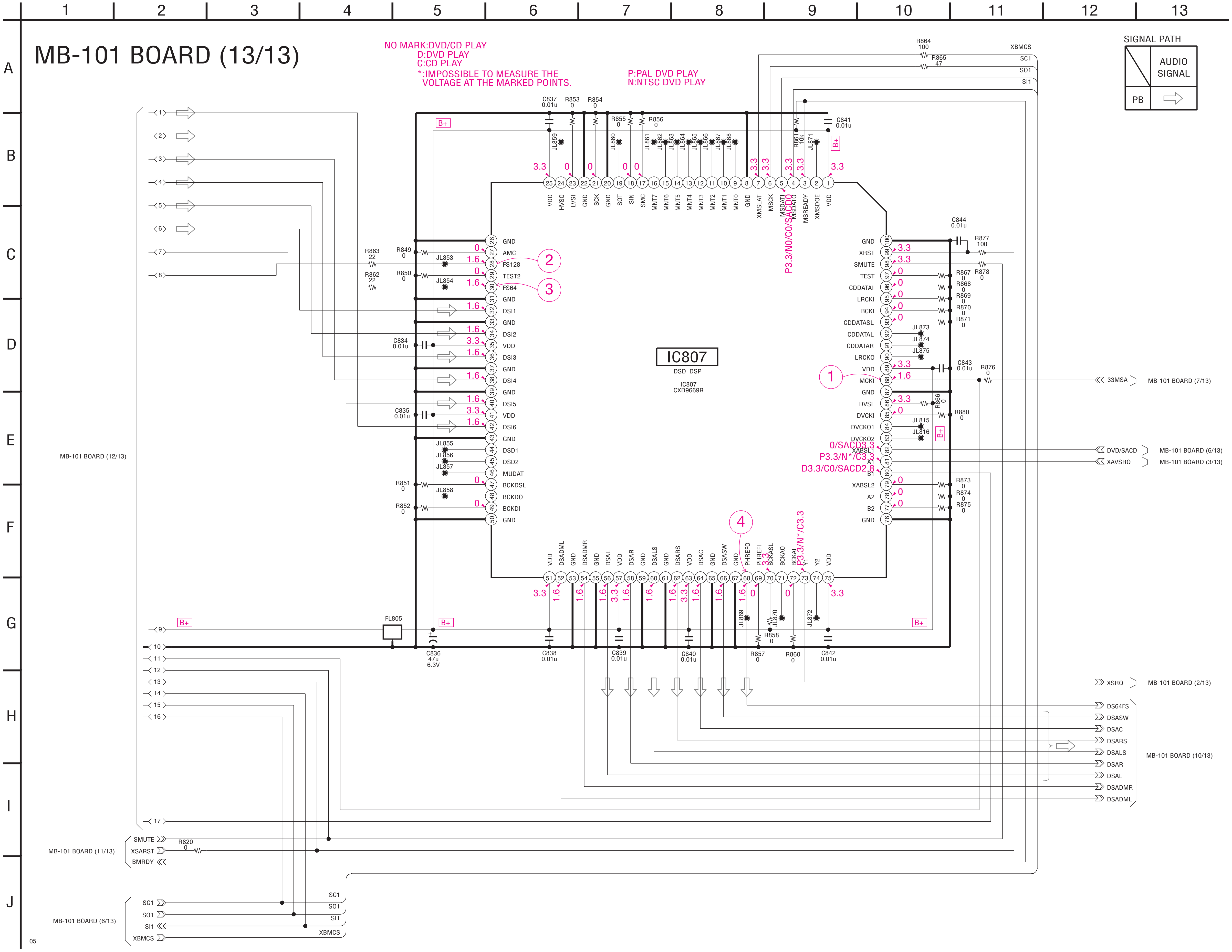
5 IC806 (166)



4.5 Vp-p (4.2 MHz)

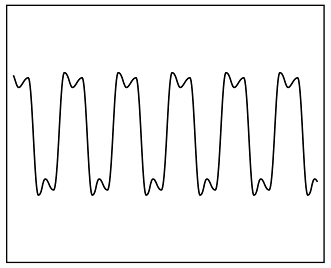
MB-101 (DSD DSP) SCHEMATIC DIAGRAM • See page 4-7 for printed wiring board.

– Ref. No.: MB-101 board; 2,000 series –



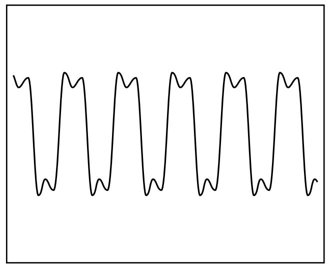
• Waveforms

❶ IC807 ㊳



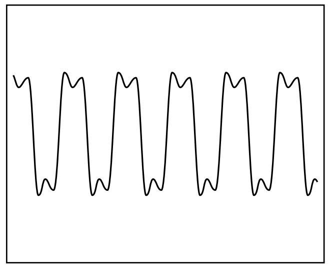
DVD: 3.3 Vp-p (24.57 MHz)
CD: 3.3 Vp-p (22.58 MHz)

❷ IC807 ㉘



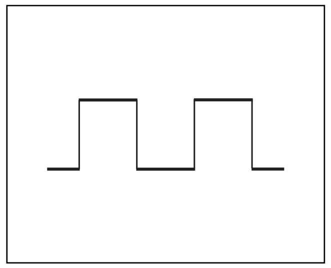
3.5 Vp-p (5.6 MHz)

❸ IC807 ㉚



3.6 Vp-p (2.8 MHz)

❹ IC807 ㊳

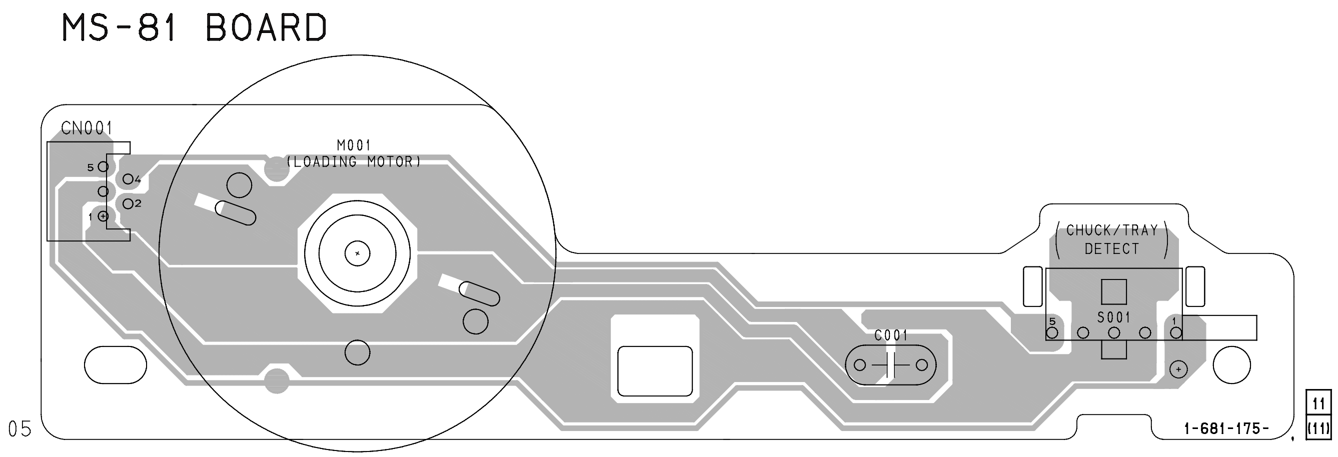


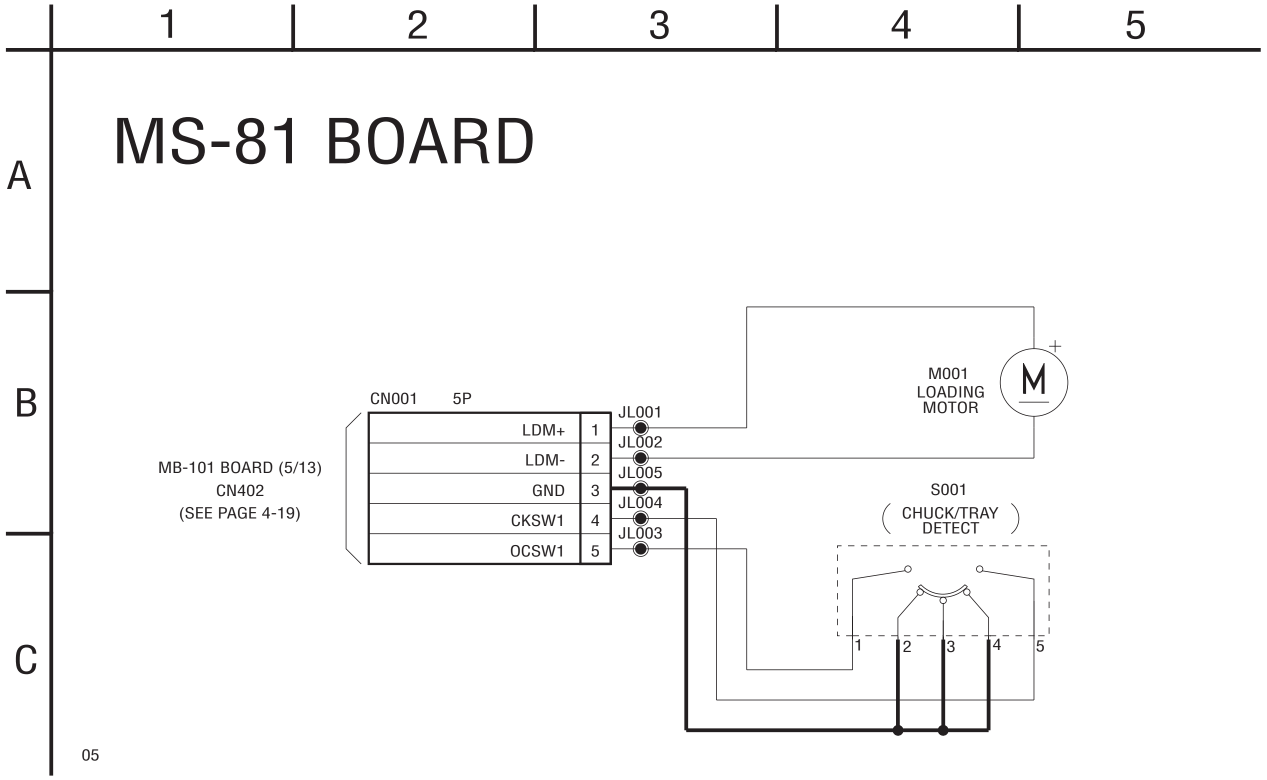
4 Vp-p (2.84 MHz)

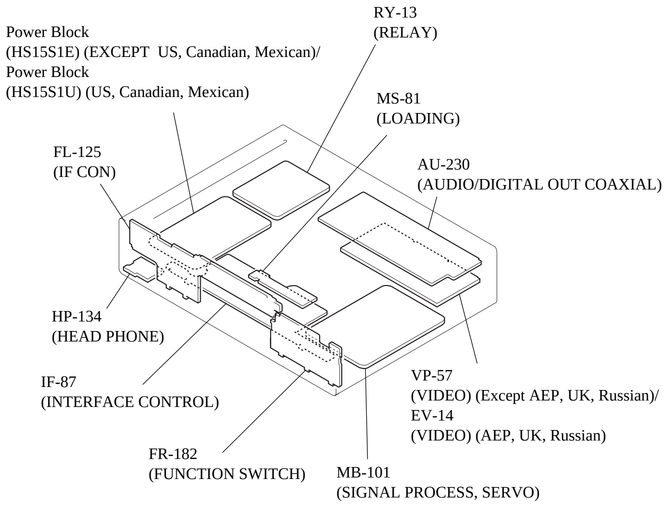
DSD DSP
MB-101 (13/13)

MS-81 (LOADING) PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM
– Ref. No.: MS-81 board; 1,000 series –

There are a few cases that the part isn't mounted in this model is printed on this diagram.



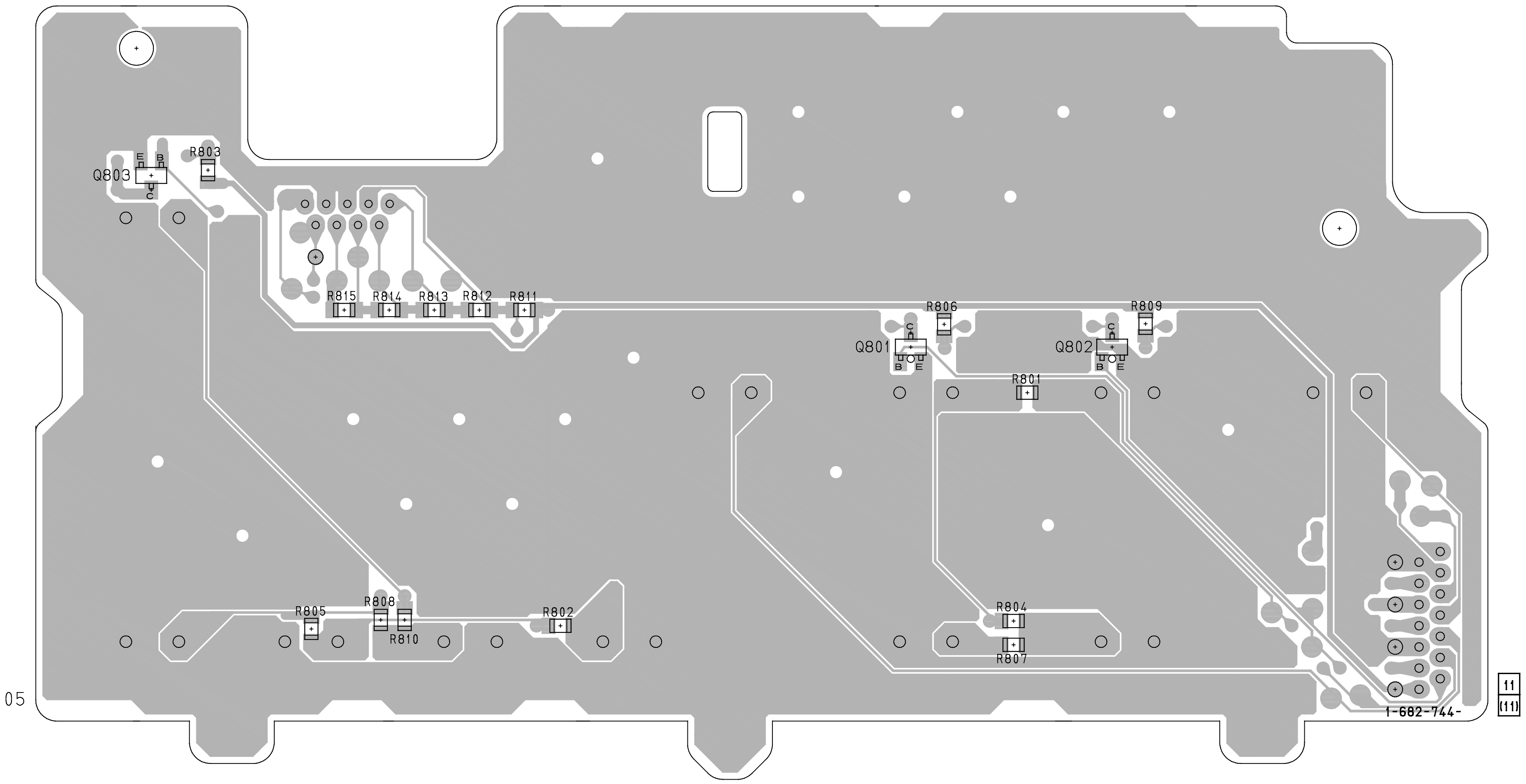




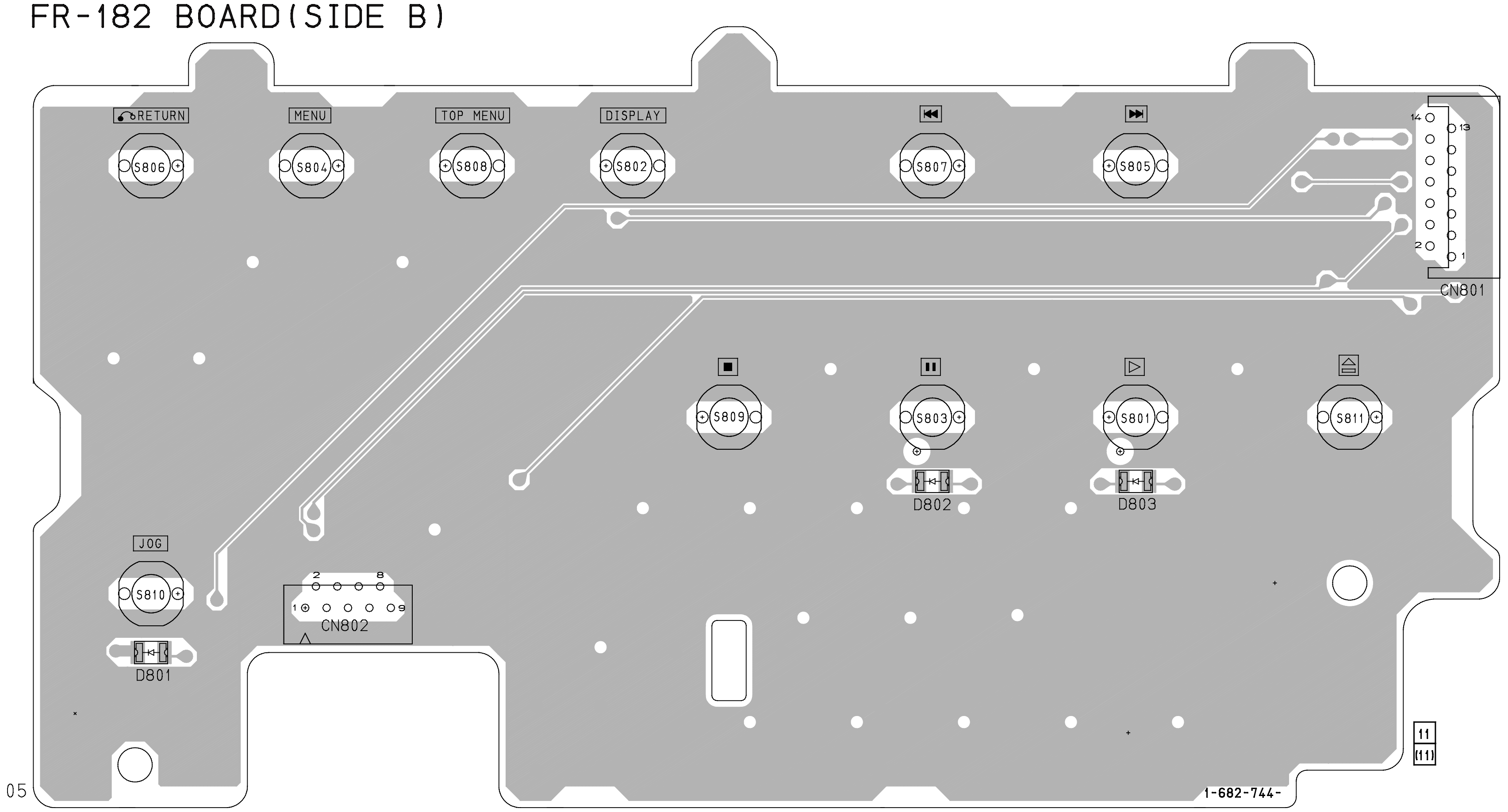
FR-182 (FUNCTION SWITCH) PRINTED WIRING BOARD
– Ref. No.: FR-182 board; 1,000 series –

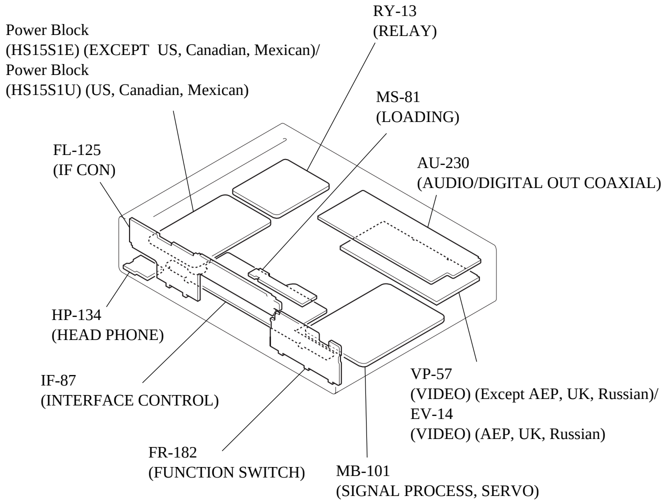
There are a few cases that the part isn't mounted in this model is printed on this diagram.

FR-182 BOARD(SIDE A)

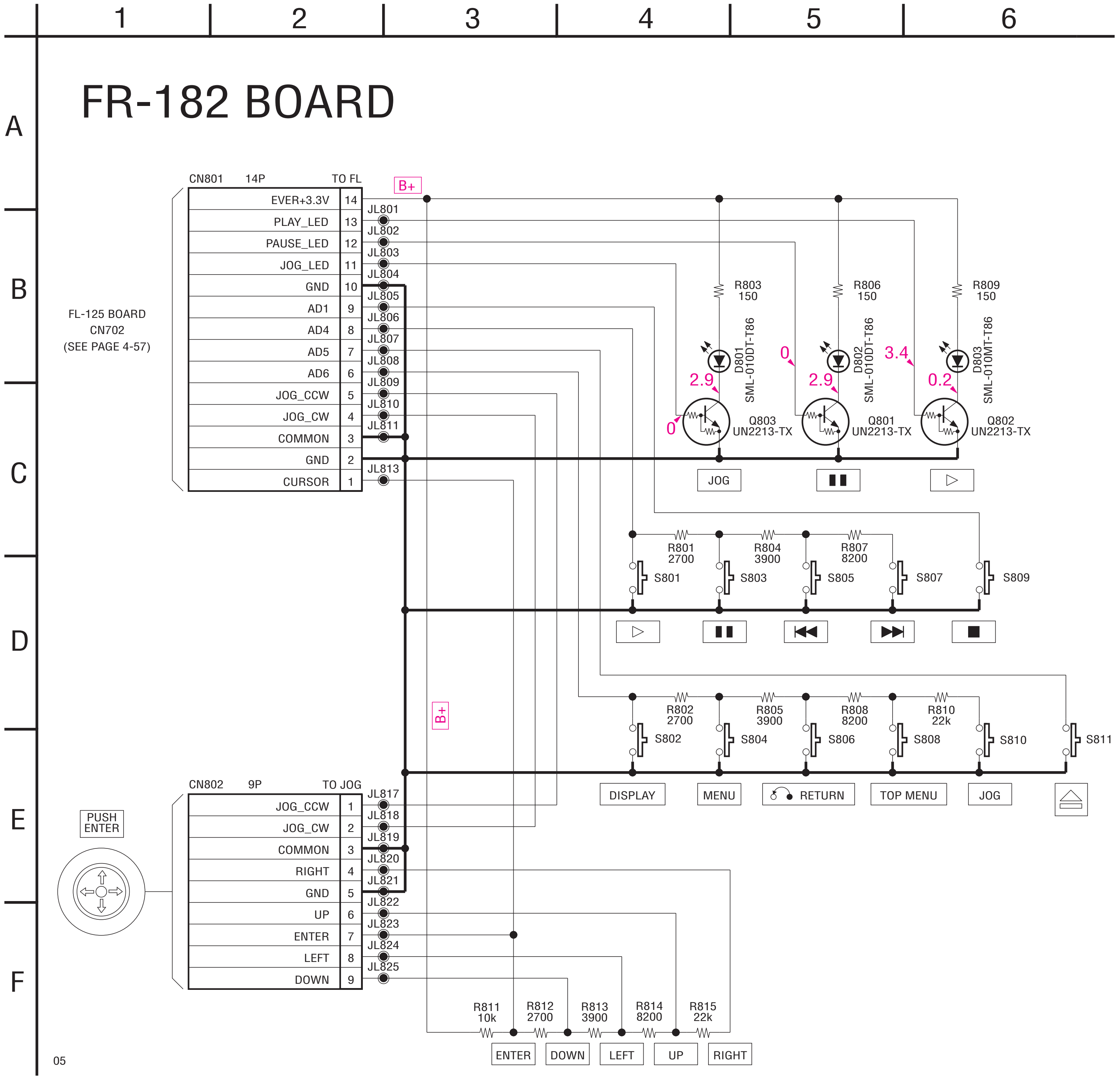


FR-182 BOARD(SIDE B)





FR-182 (FUNCTION SWITCH) SCHEMATIC DIAGRAM
– Ref. No.: FR-182 board; 1,000 series –

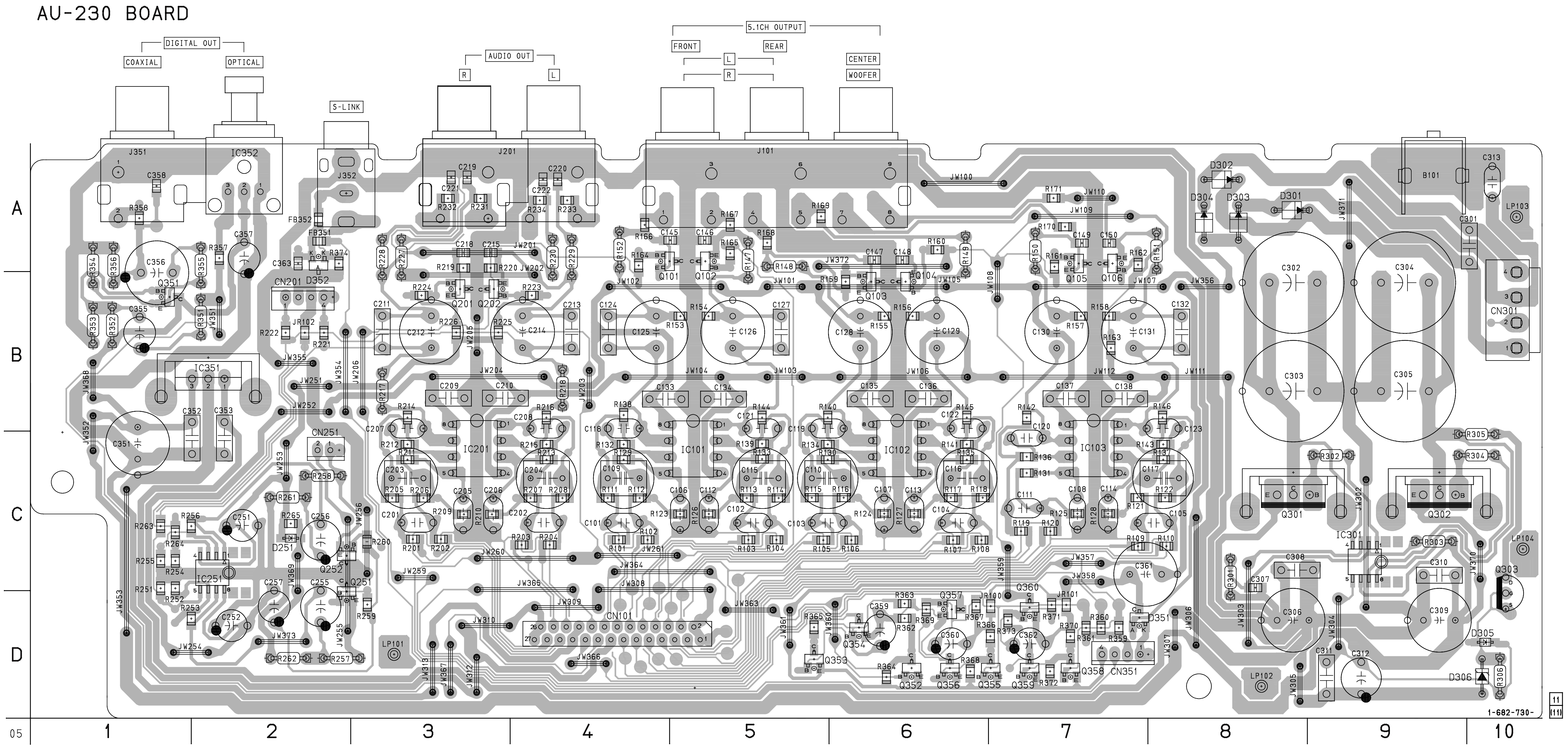


FUNCTION SWITCH
FR-182

AU-230 (AUDIO/DIGITAL OUT COAXIAL) PRINTED WIRING BOARD

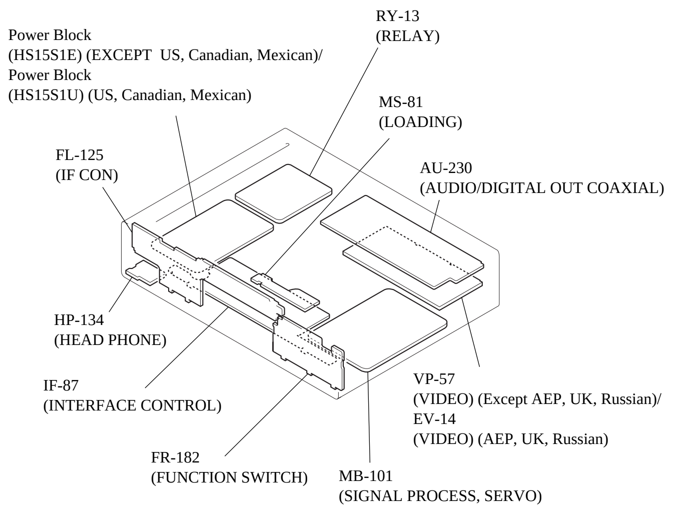
– Ref. No.: AU-230 board; 1,000 series –

There are a few cases that the part isn't mounted in this model is printed on this diagram.

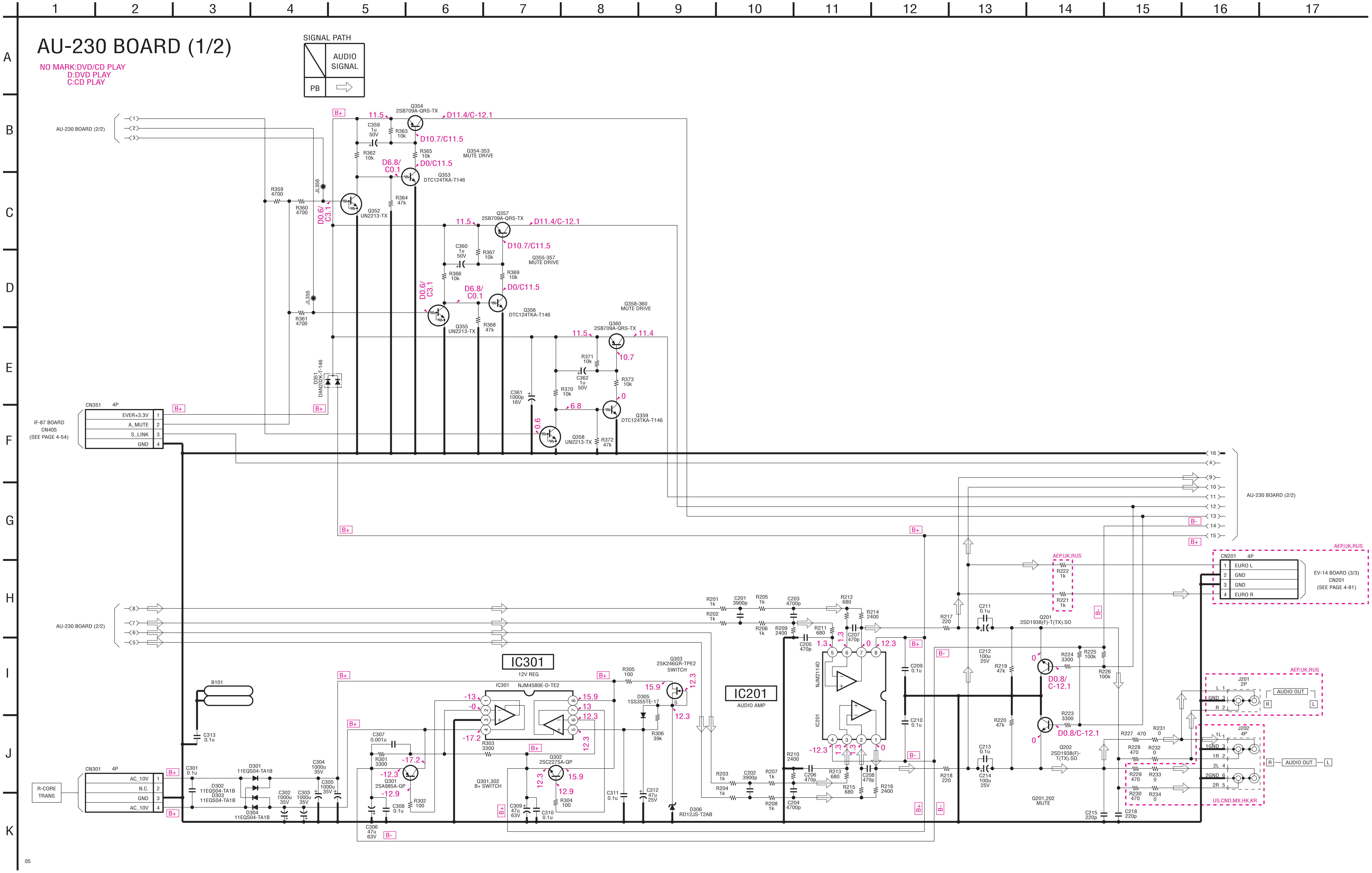


AU-230 BOARD

CN101	D-4
CN201	B-2
CN251	C-2
CN301	B-10
CN351	D-7
D251	C-2
D301	A-8
D302	A-8
D303	A-8
D304	A-8
D305	D-10
D306	D-10
D351	D-7
D352	B-2
IC101	C-5
IC102	C-6
IC103	C-7
IC201	C-3
IC251	C-2
IC301	C-9
IC351	B-2
IC352	A-2
Q101	B-4
Q102	B-5
Q103	B-6
Q104	B-6
Q105	B-7
Q106	B-7
Q201	B-3
Q202	B-3
Q251	D-2
Q252	C-2
Q301	C-8
Q302	C-9
Q303	D-10
Q351	B-1
Q352	D-6
Q353	D-5
Q354	D-6
Q355	D-7
Q356	D-6
Q357	D-6
Q358	D-7
Q359	D-7
Q360	D-7

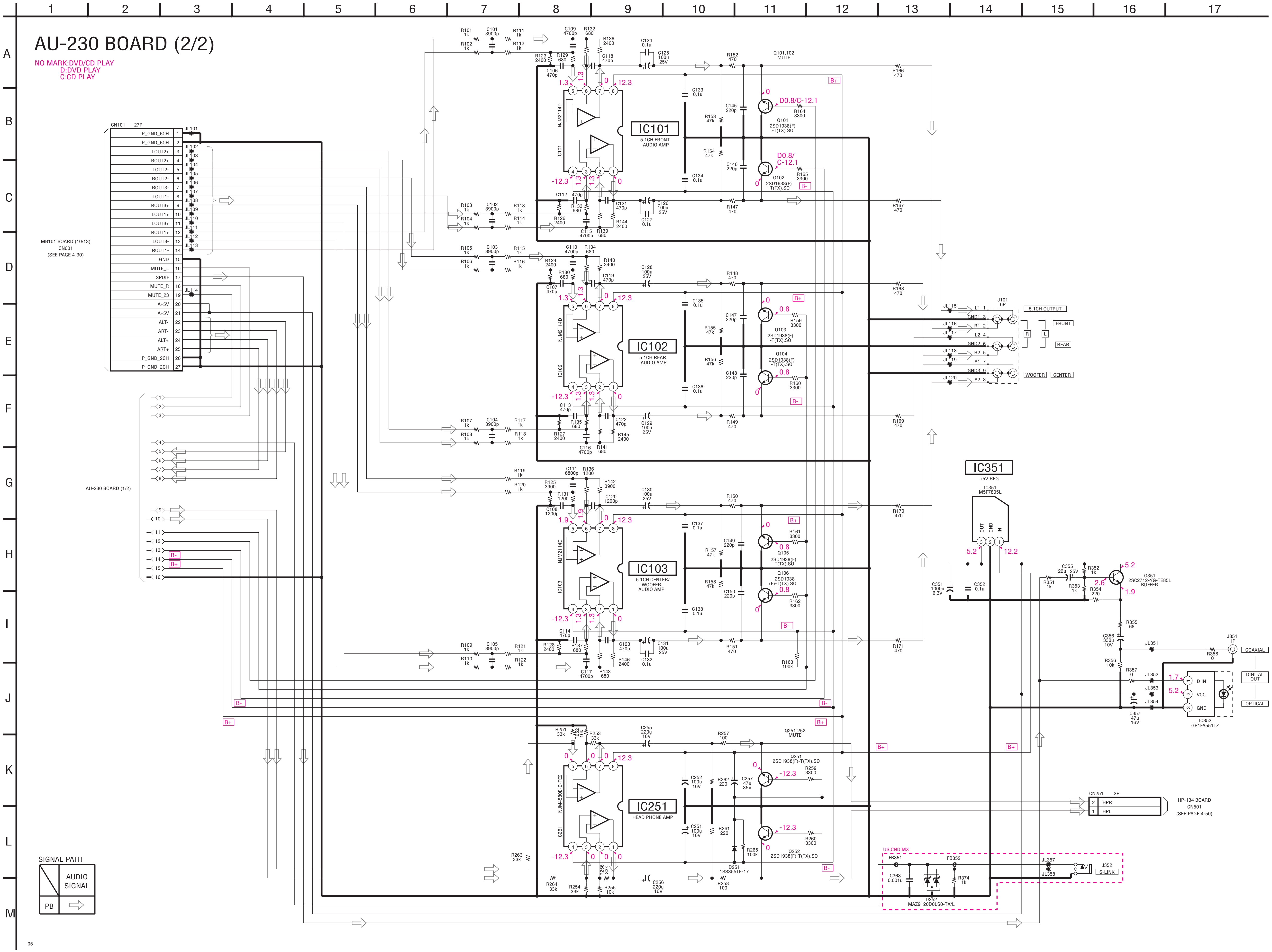


AU-230 (AUDIO) SCHEMATIC DIAGRAM
– Ref. No.: AU-230 board; 1,000 series –



AU-230 (DIGITAL OUT COAXIAL) SCHEMATIC DIAGRAM

– Ref. No.: AU-230 board; 1,000 series –

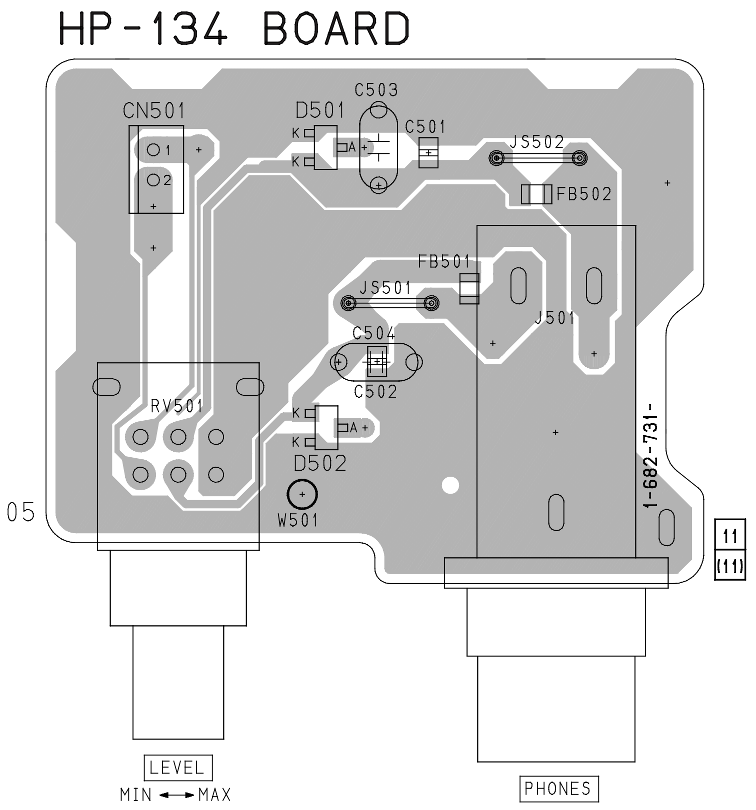


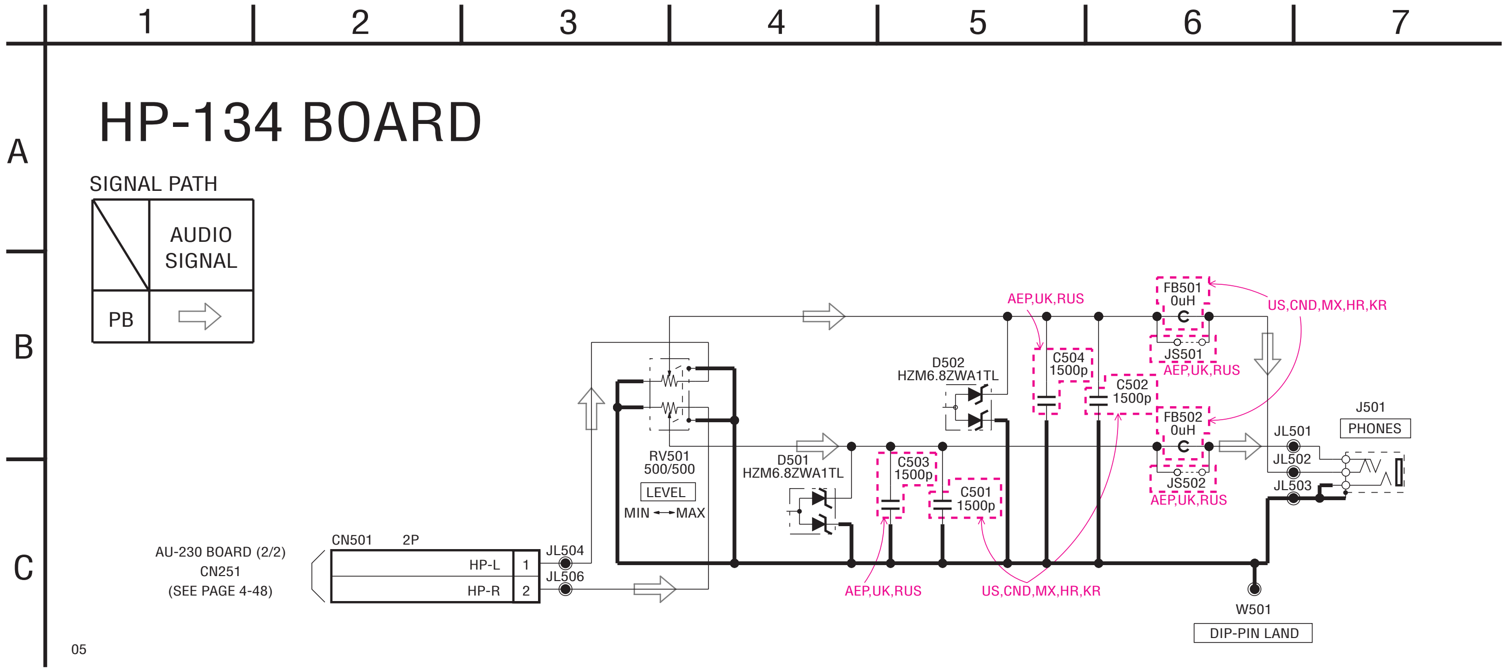
DIGITAL OUT COAXIAL
AU-230 (2/2)

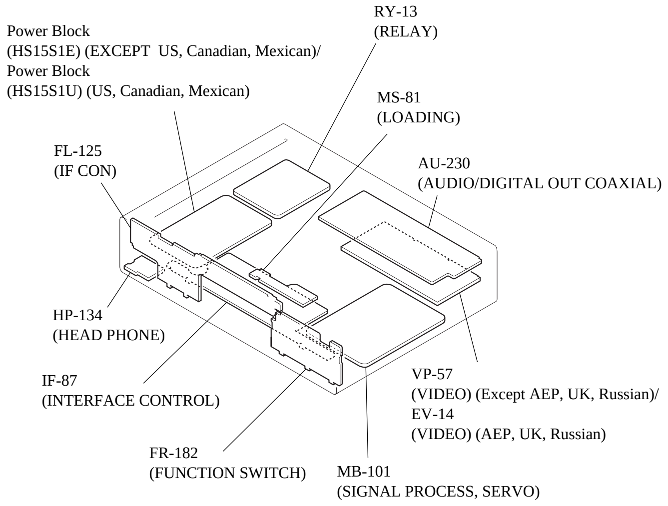
HP-134 (HEADPHONE) PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM

– Ref. No.: HP-134 board; 1,000 series –

There are a few cases that the part isn't mounted in this model is printed on this diagram.



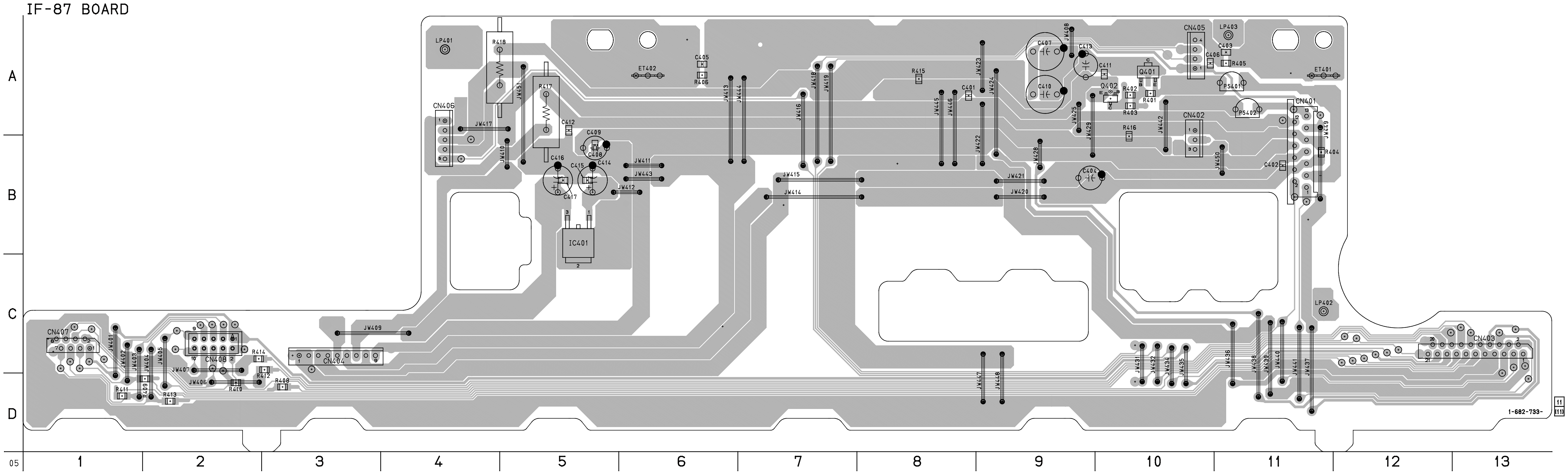


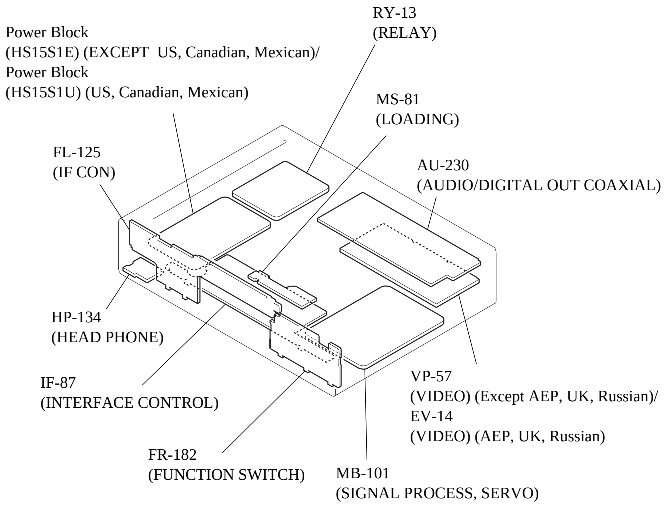


IF-87 (INTERFACE CONTROL) PRINTED WIRING BOARD

– Ref. No.: IF-87 board; 1,000 series –

There are a few cases that the part isn't mounted in this model is printed on this diagram.



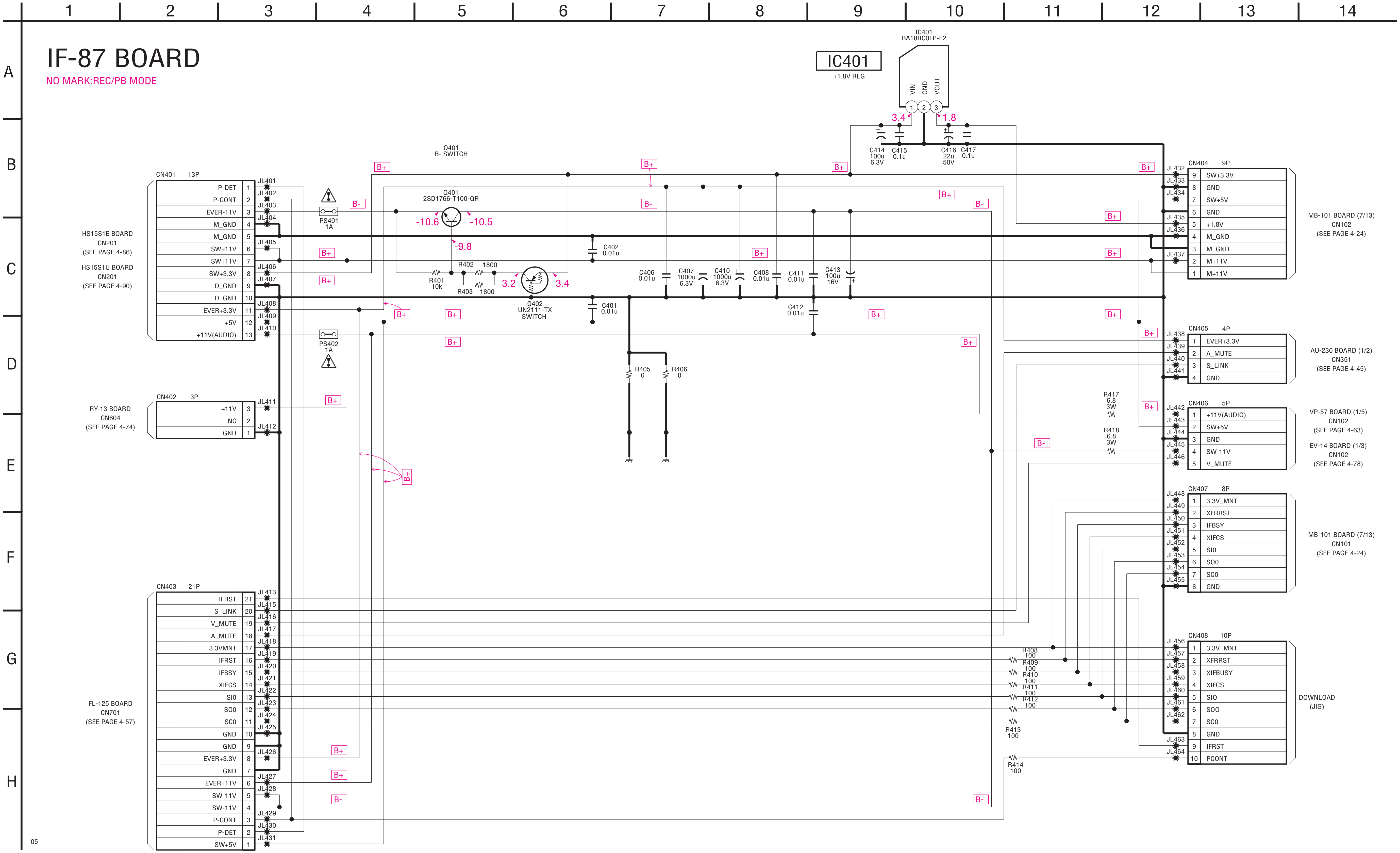


IF-87 BOARD

CN401	B-11
CN402	B-10
CN403	C-13
CN404	C-3
CN405	A-10
CN406	B-4
CN407	C-1
CN408	C-2
IC401	B-5
Q401	A-10
Q402	A-10

IF-87 (INTERFACE CONTROL) SCHEMATIC DIAGRAM
– Ref. No.: IF-87 board; 1,000 series –

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.



INTERFACE CONTROL
IF-87

FL-125 (IF CON) PRINTED WIRING BOARD

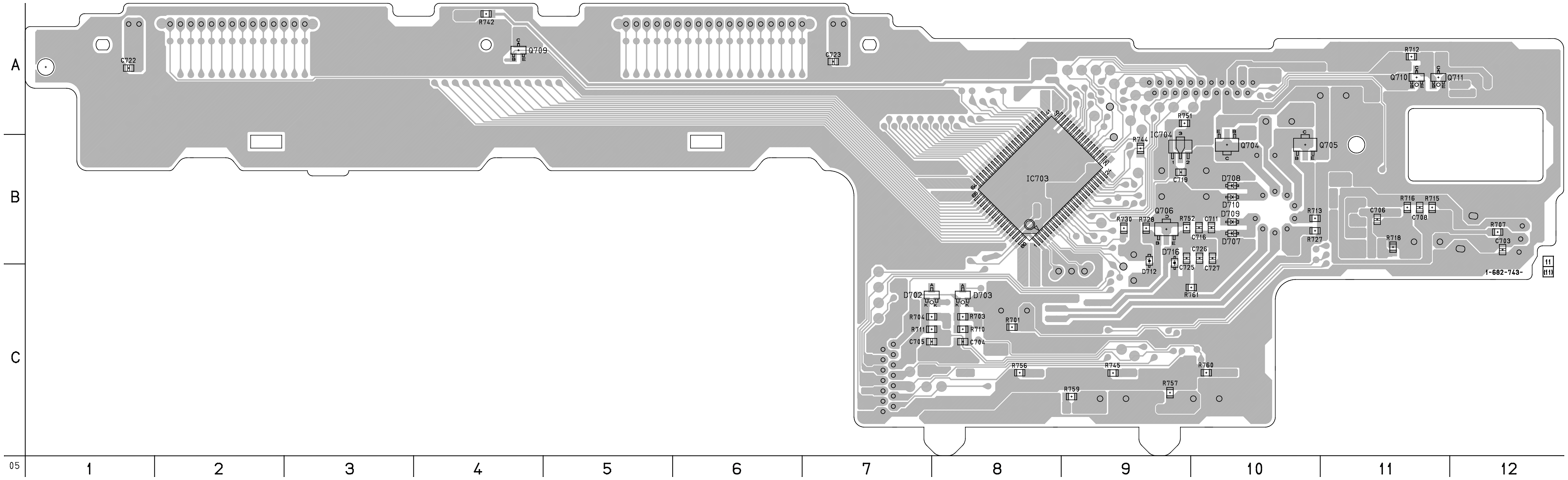
– Ref. No.: FL-125 board; 1,000 series –

There are a few cases that the part isn't mounted in this model is printed on this diagram.

FL-125 BOARD (SIDE A)

D702	C-7
D703	C-8
D707	B-10
D708	B-10
D709	B-10
D710	B-10
D712	C-9
D716	C-9
IC703	B-8
IC704	B-9
Q704	B-10
Q705	B-10
Q706	B-9
Q709	A-4
Q710	A-11
Q711	A-11

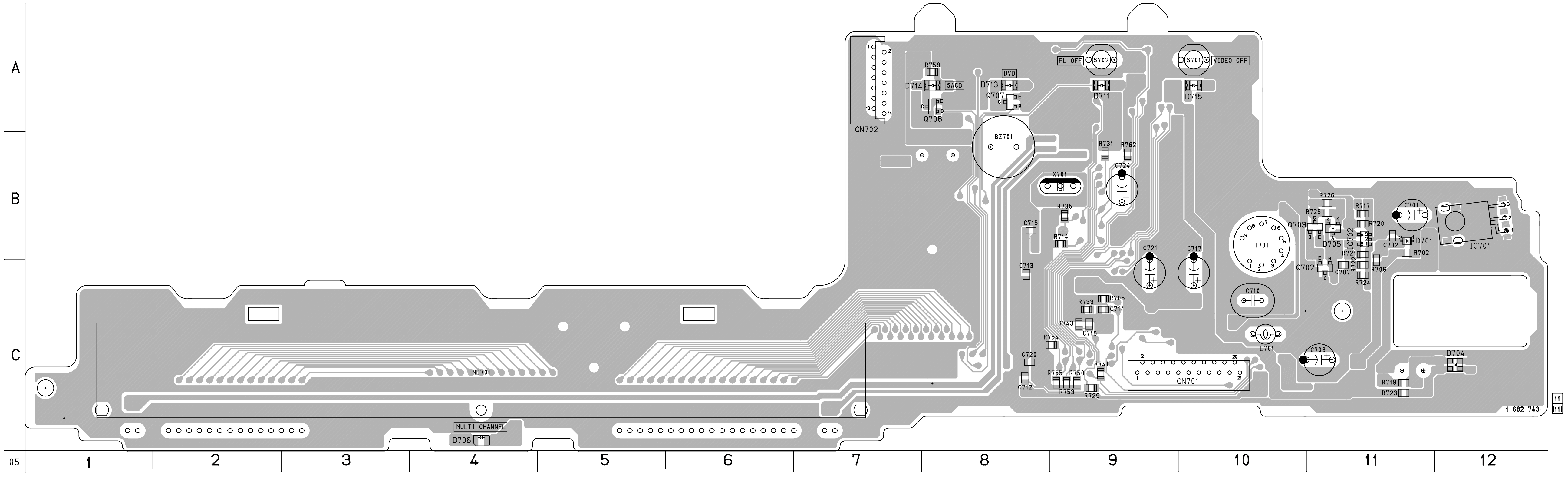
FL-125 BOARD(SIDE A)



FL-125 BOARD (SIDE B)

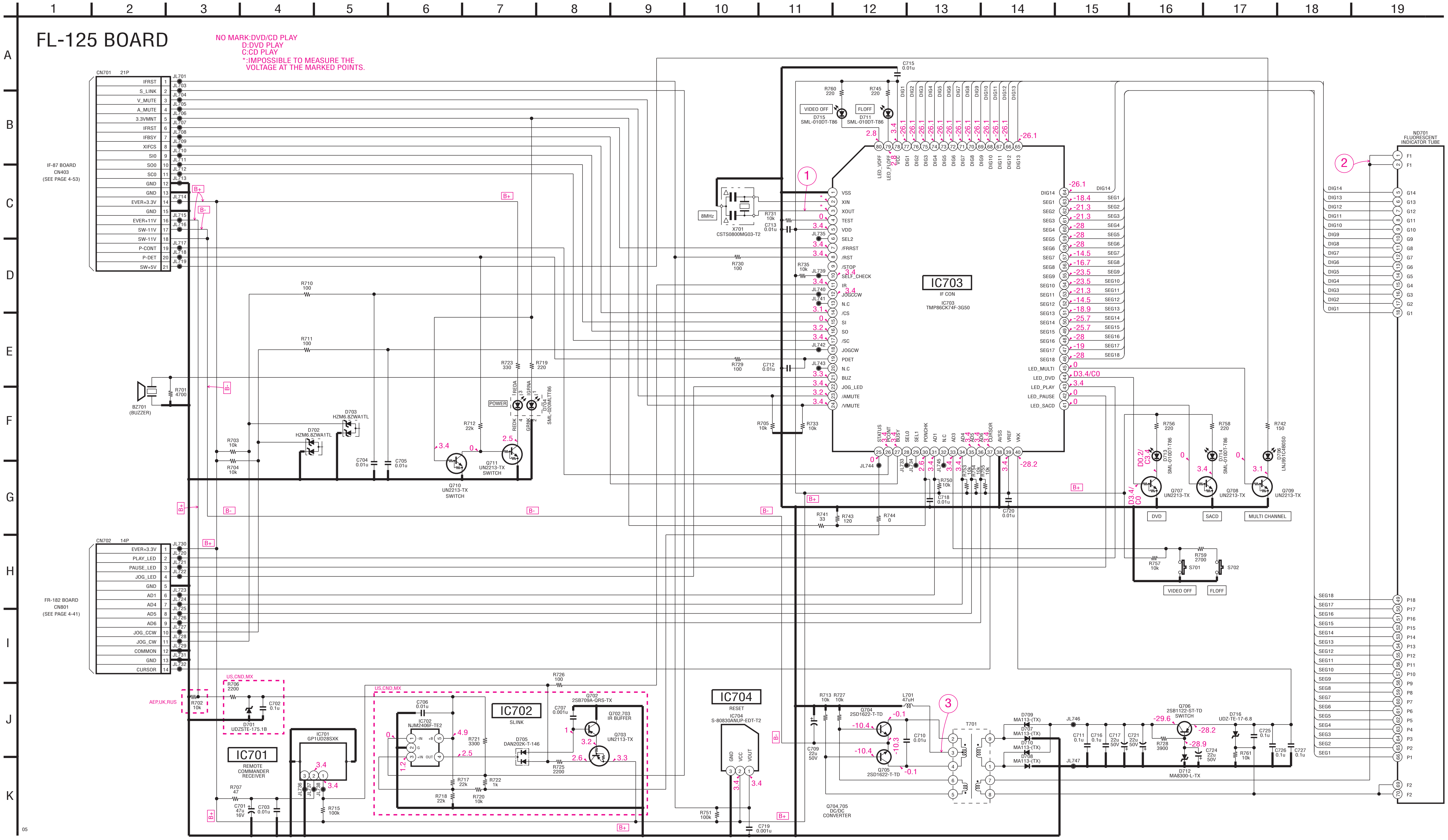
CN701	C-10
CN702	A-7
D701	B-11
D704	C-12
D705	B-11
D706	C-4
D711	A-9
D713	A-8
D714	A-7
D715	A-10
IC701	B-12
IC702	B-11
Q702	C-11
Q703	C-11
Q707	A-8
Q708	B-7

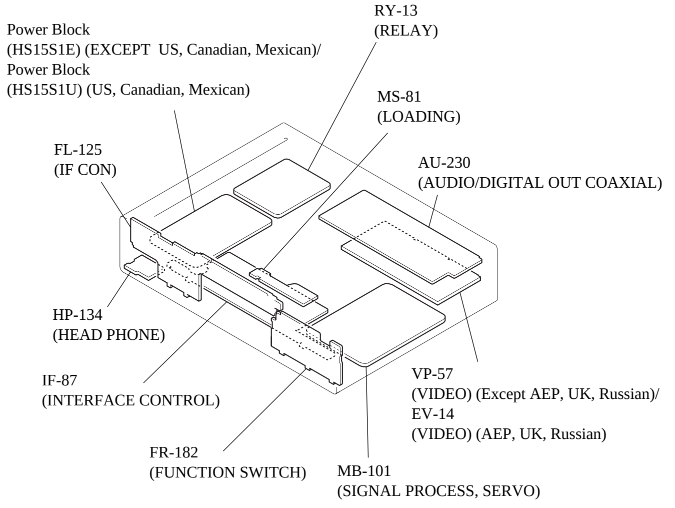
FL-125 BOARD(SIDE B)



FL-125 (IF CON) SCHEMATIC DIAGRAM

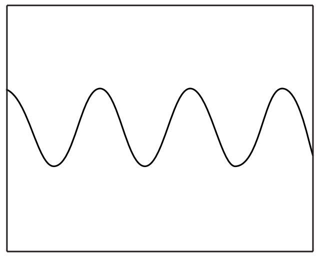
– Ref. No.: FL-125 board; 1,000 series –





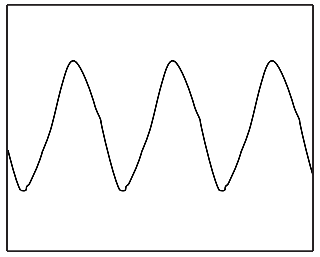
• Waveforms

❶ IC703 ③



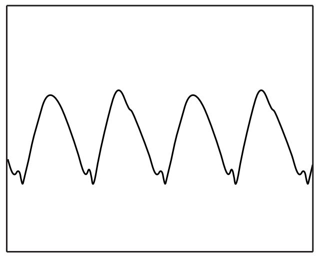
3.4 Vp-p (8 MHz)

❷ ND701 ①, ②



8 Vp-p (200 kHz)

❸ T701 ③



20 Vp-p (409 kHz)

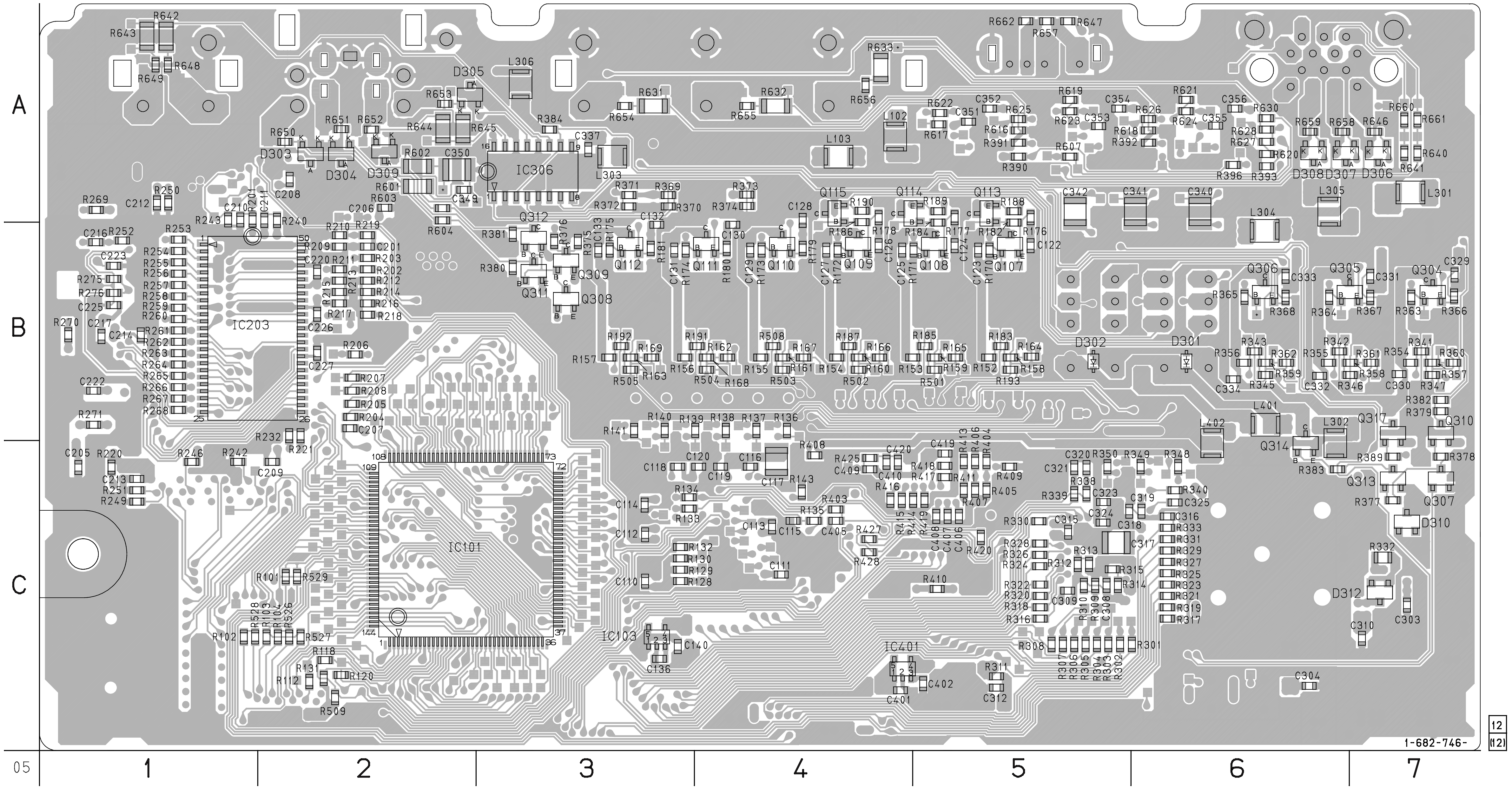
VP-57 (VIDEO) PRINTED WIRING BOARD
– Ref. No.: VP-57 board; 3,000 series –
– US, CND, MX, HK, KR –

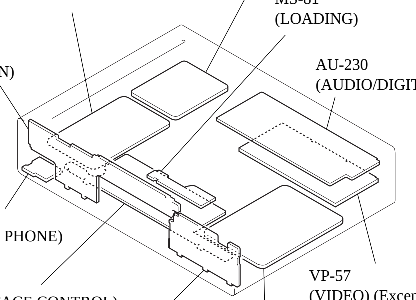
There are a few cases that the part isn't mounted in this model is printed on this diagram.

VP-57 BOARD (SIDE A)

D301	B-6
D302	B-5
D303	A-2
D304	A-2
D305	A-2
D309	A-2
D310	C-7
IC101	C-2
IC103	C-3
IC203	B-1
IC306	A-3
Q107	B-5
Q108	B-5
Q109	B-4
Q110	B-4
Q111	B-3
Q112	B-3
Q113	B-5
Q114	B-4
Q115	B-4
Q304	B-7
Q305	B-6
Q306	B-6
Q307	C-7
Q308	B-3
Q309	B-3
Q310	C-7
Q311	B-3
Q312	B-3
Q313	C-7
Q314	C-6
Q317	C-7

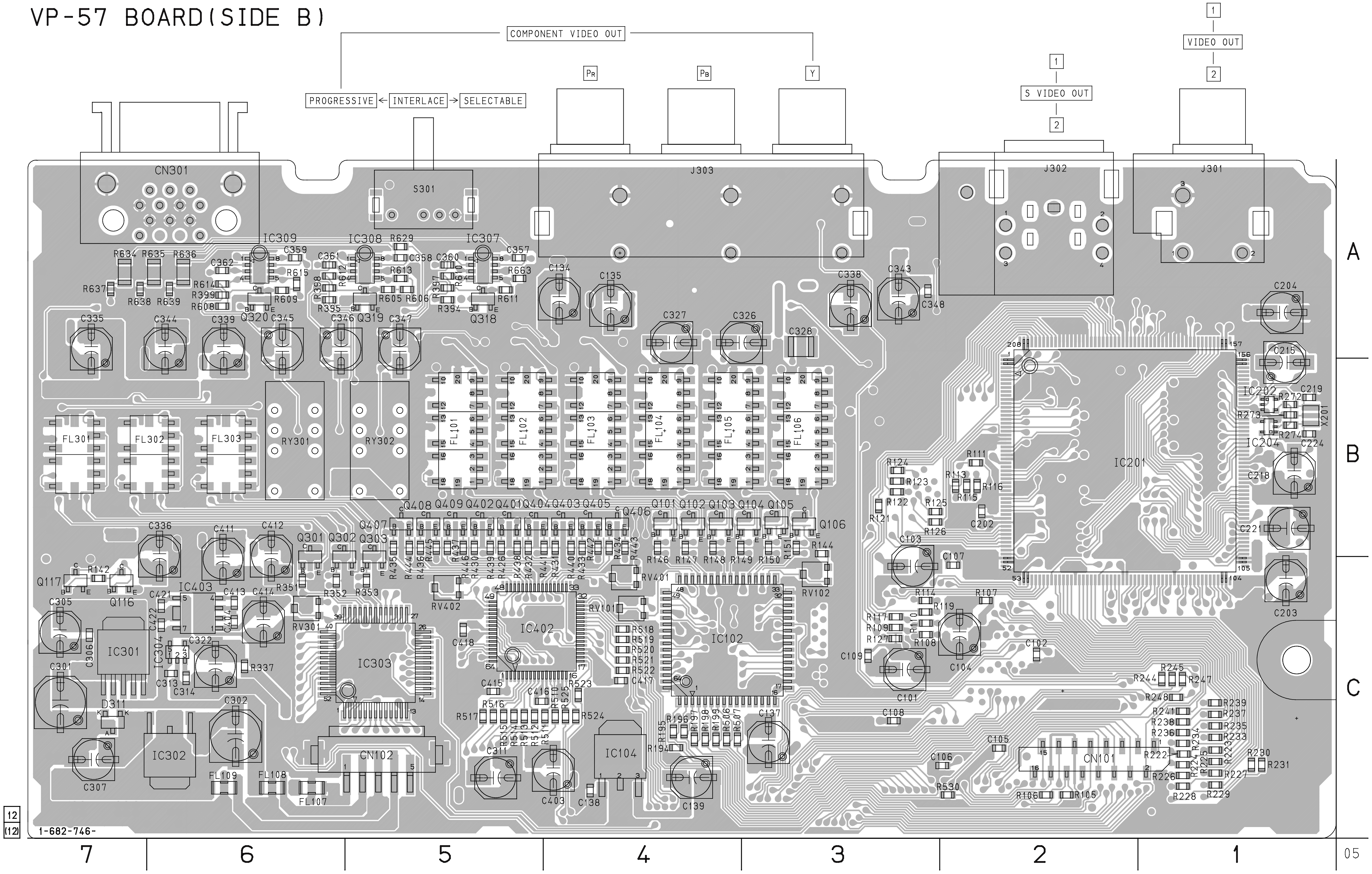
VP-57 BOARD(SIDE A)





VIDEO
VP-57

VP-57 BOARD(SIDE B)



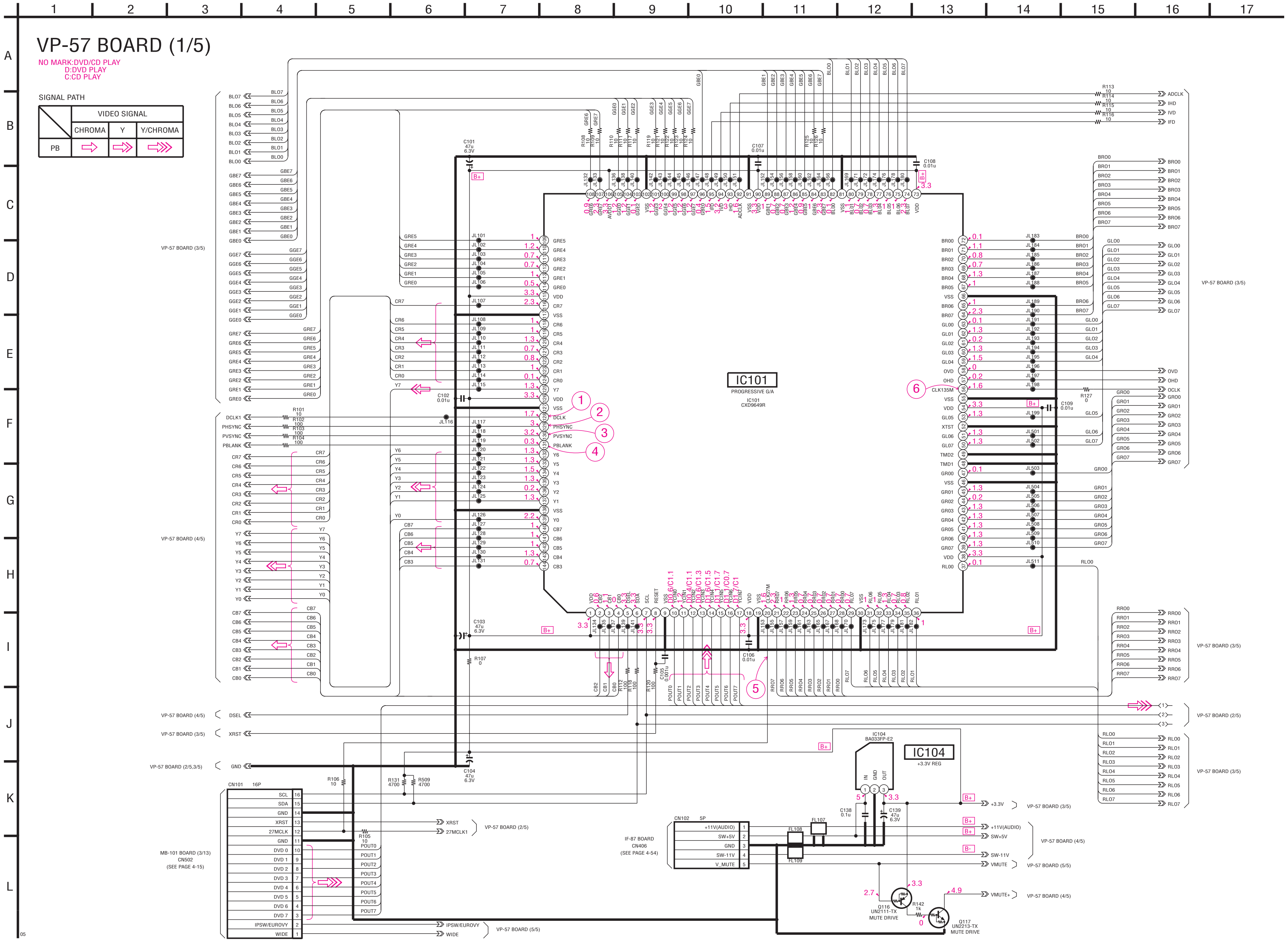
VP-57 BOARD (SIDE B)

CN101	C-2
CN102	C-5
D311	C-7
IC104	C-4
IC201	B-2
IC202	B-1
IC204	B-1
IC301	C-7
IC302	C-6
IC303	C-5
IC304	C-6
IC307	A-5
IC308	A-5
Q101	B-4
Q102	B-4
Q103	B-4
Q104	B-3
Q105	B-3
Q106	B-3
Q116	C-7
Q117	C-7
Q301	B-6
Q302	B-6
Q303	B-5
Q318	A-5
Q319	A-5
Q320	A-6

VP-57 (PROGRESSIVE) SCHEMATIC DIAGRAM • See page 4-59 for printed wiring board.

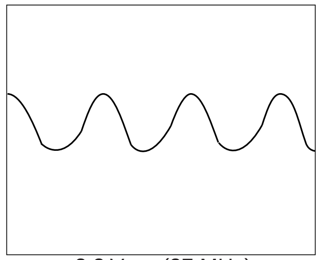
– Ref. No.: VP-57 board; 3,000 series –

– US, CND, MX, HK, KR –



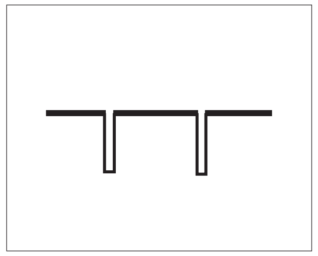
• Waveforms

❶ IC101 ⑫⑧



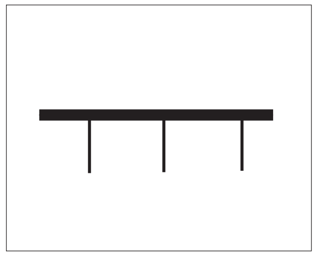
3.3 Vp-p (27 MHz)

❷ IC101 ⑫⑨



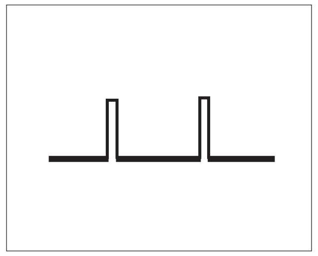
3.4 Vp-p (H)

❸ IC101 ⑬⓪



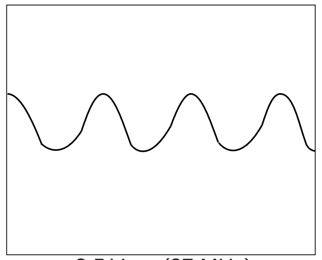
3.4 Vp-p (V)

❹ IC101 ⑬①



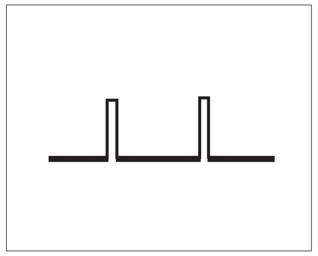
3.5 Vp-p (H)

❺ IC101 ⑳



3.5 Vp-p (27 MHz)

❻ IC101 ㊺



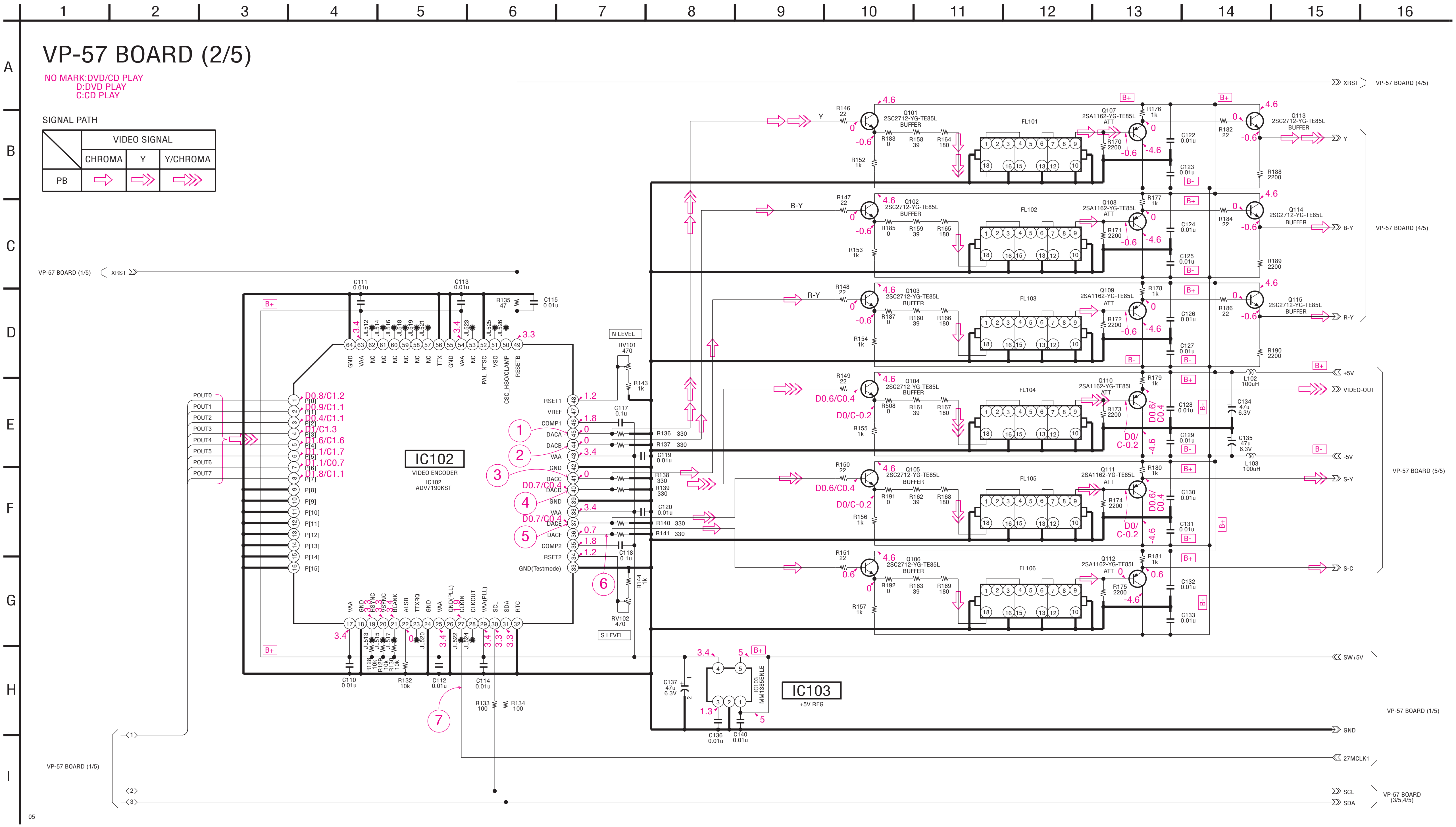
3.5 Vp-p (31.25 kHz)

PROGRESSIVE
VP-57 (1/5)

VP-57 (VIDEO ENCODER) SCHEMATIC DIAGRAM • See page 4-59 for printed wiring board.

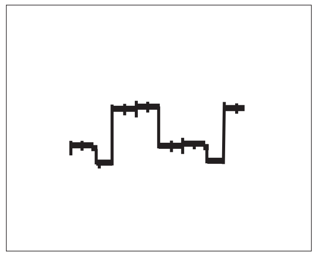
– Ref. No.: VP-57 board; 3,000 series –

– US, CND, MX, HK, KR –



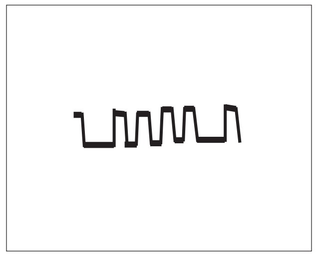
• Waveforms

❶ IC102 ㊺



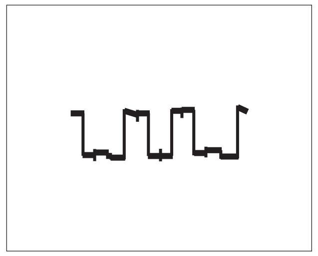
830 mVp-p (H)

❷ IC102 ㊹



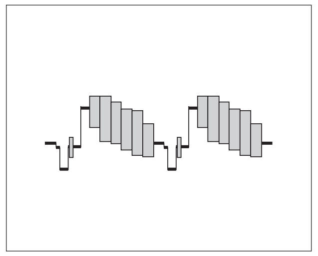
810 mVp-p (H)

❸ IC102 ㊶



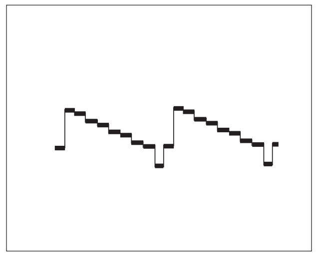
810 mVp-p (H)

❹ IC102 ㊵



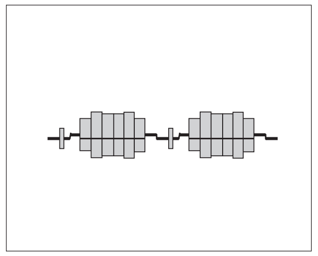
1.2 Vp-p (H)

❺ IC102 ㊲



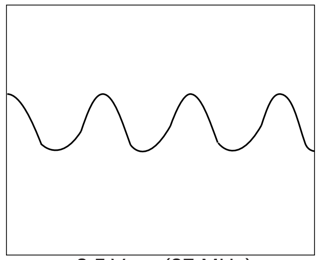
990 mVp-p (H)

❻ IC102 ㊱



860 mVp-p (H)

❼ IC102 ㉗



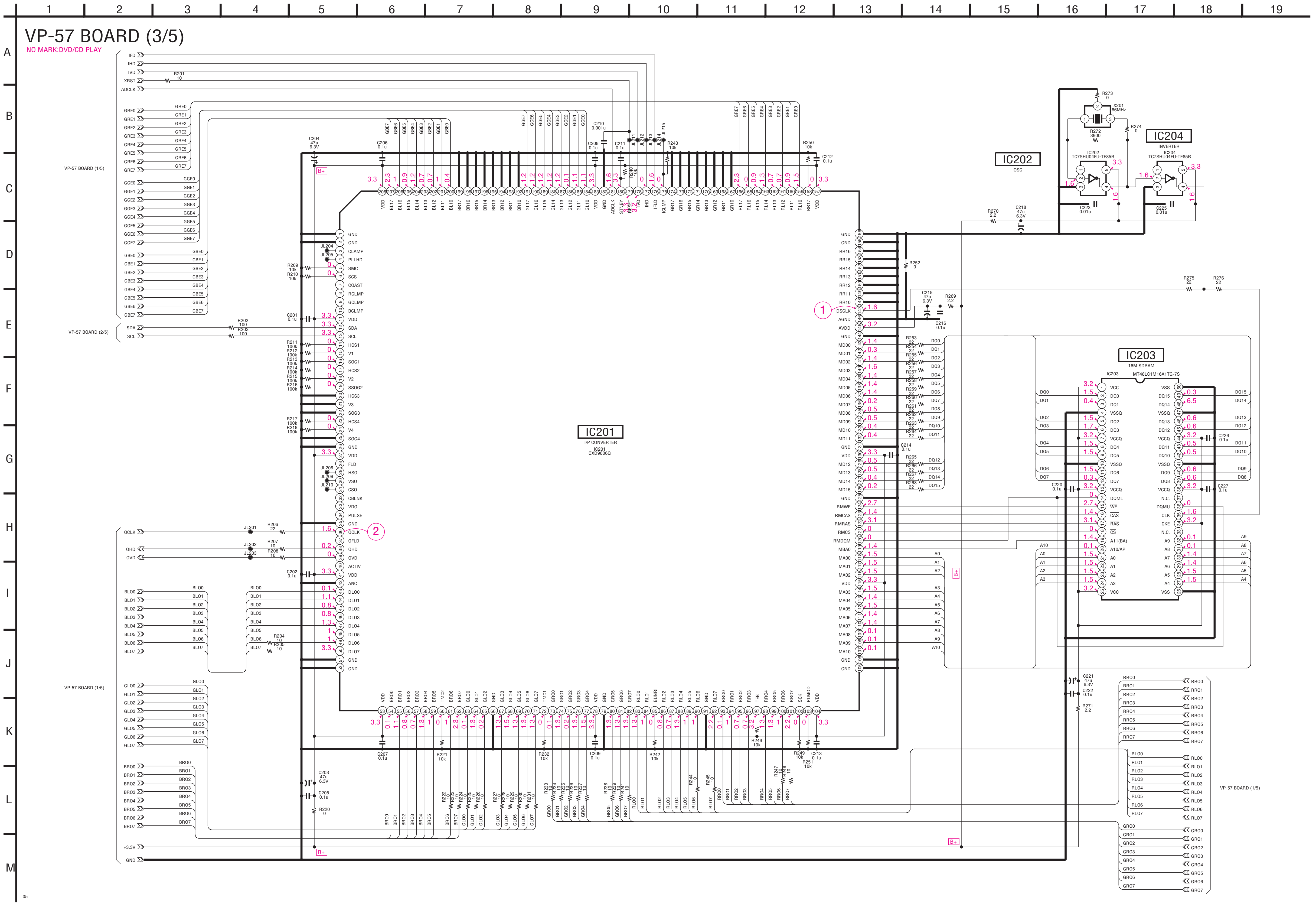
3.5 Vp-p (27 MHz)

VP-57 (I/P CONVERTER) SCHEMATIC DIAGRAM • See page 4-59 for printed wiring board.

• See page 4-59 for printed wiring board.

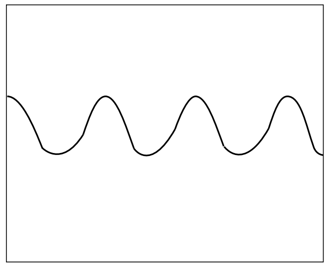
– Ref. No.: VP-57 board; 3,000 series –

– US, CND, MX, HK, KR –



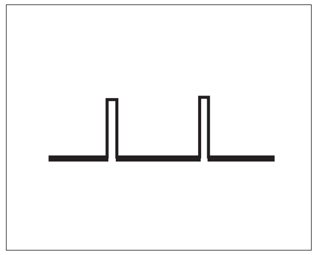
• Waveform

❶ IC201 ⑭



1.6 Vp-p (66 MHz)

❷ IC201 ㊱

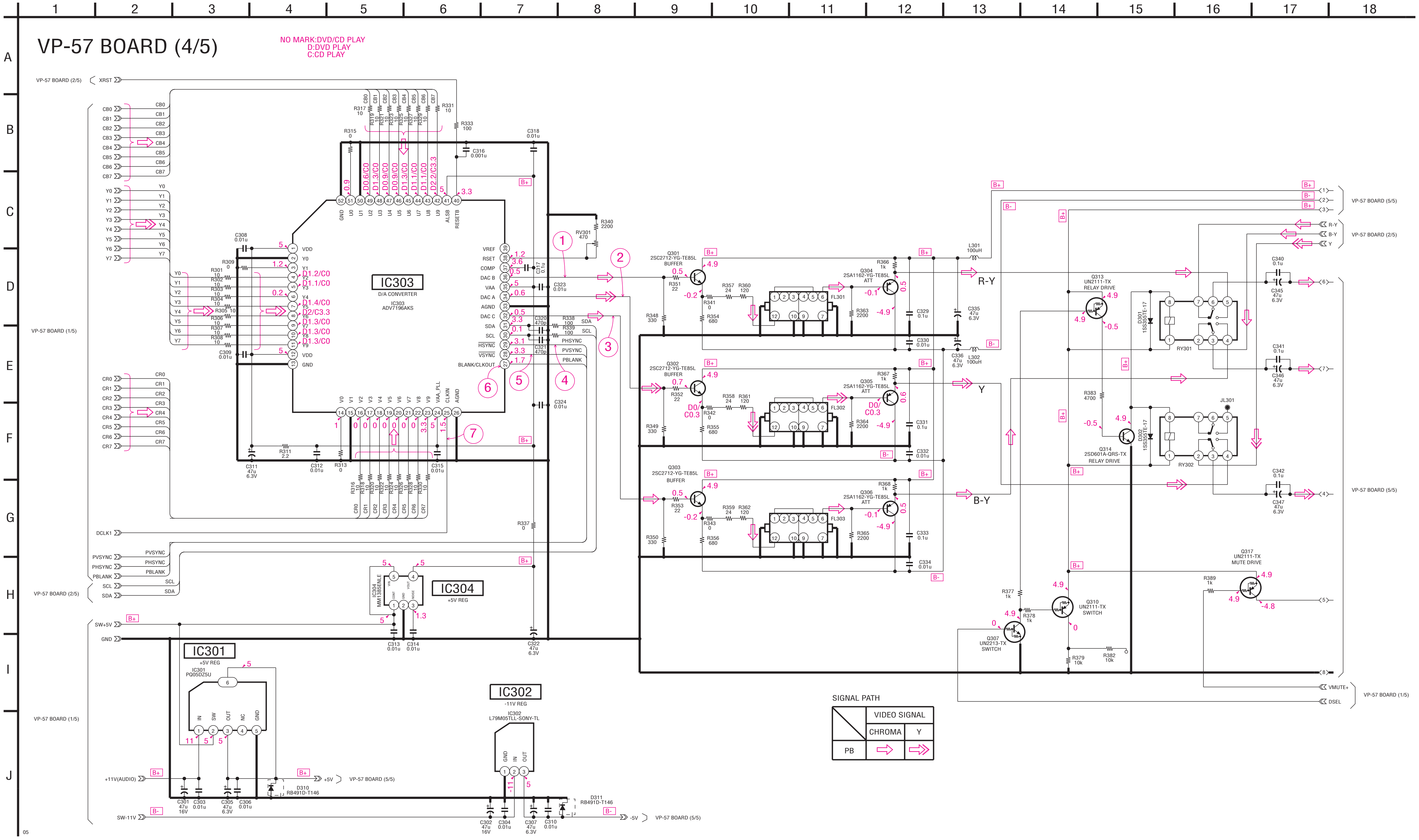


3.5 Vp-p (31.25 kHz)

VP-57 (D/A CONVERTER) SCHEMATIC DIAGRAM • See page 4-59 for printed wiring board.

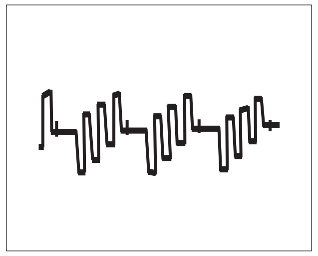
– Ref. No.: VP-57 board; 3,000 series –

– US, CND, MX, HK, KR –



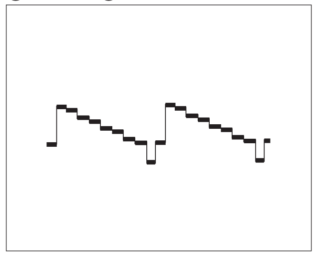
• Waveforms

❶ IC303 ㊱



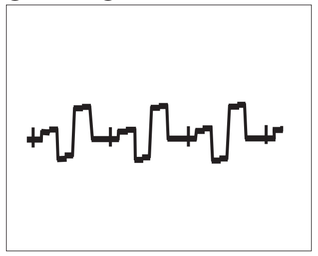
820 mVp-p (H)

❷ IC303 ㉞



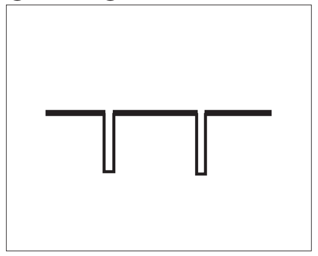
1.1 Vp-p (H)

❸ IC303 ㉜



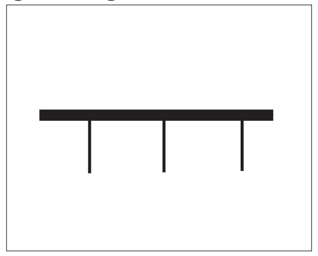
820 mVp-p (H)

❹ IC303 ㉙



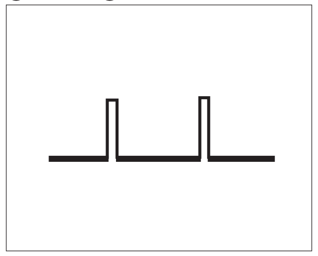
3.4 Vp-p (H)

❺ IC303 ㉘



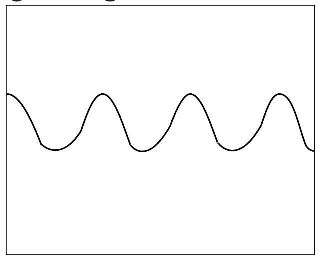
3.4 Vp-p (V)

❻ IC303 ㉗



3.5 Vp-p (H)

❼ IC303 ㉕

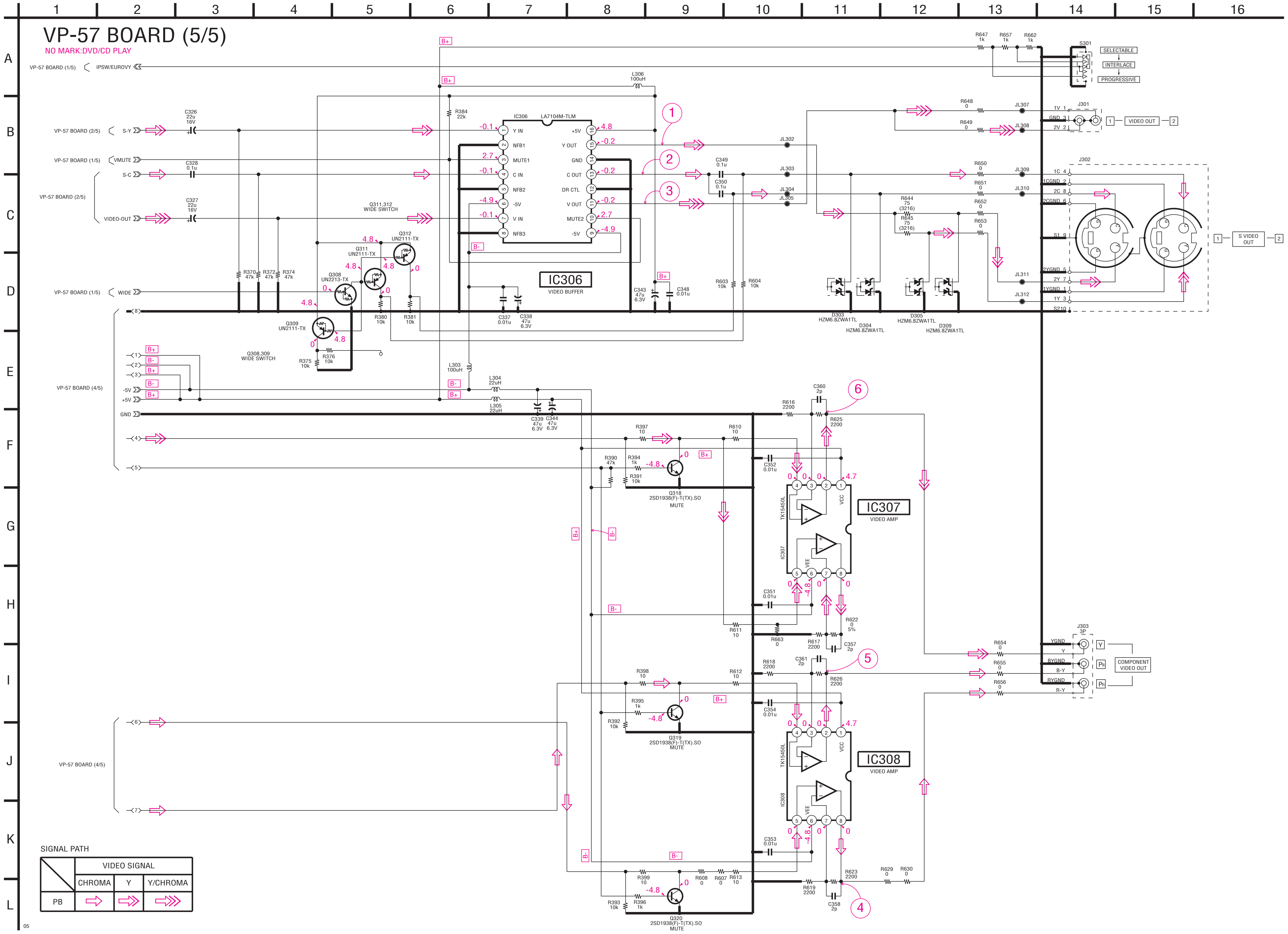


3.3 Vp-p (27 MHz)

VP-57 (VIDEO BUFFER) SCHEMATIC DIAGRAM • See page 4-59 for printed wiring board.

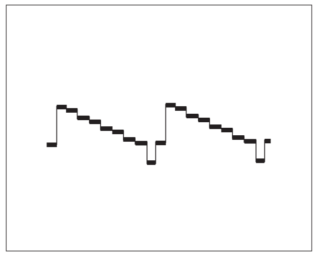
– Ref. No.: VP-57 board; 3,000 series –

– US, CND, MX, HK, KR –



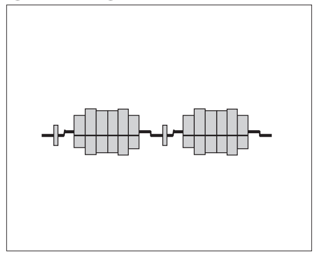
• **Waveforms**

❶ IC306 ⑮



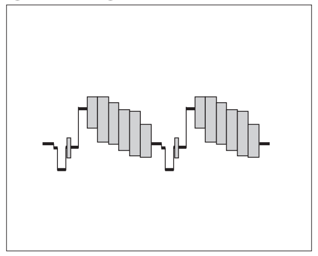
2.2 Vp-p (H)

❷ IC306 ⑬



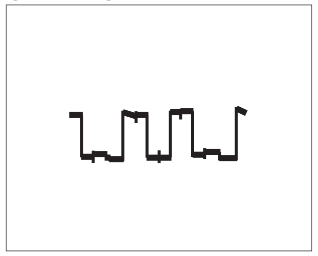
1.8 Vp-p (H)

❸ IC306 ⑪



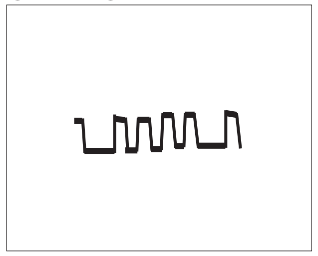
2.4 Vp-p (H)

❹ IC308 ⑧



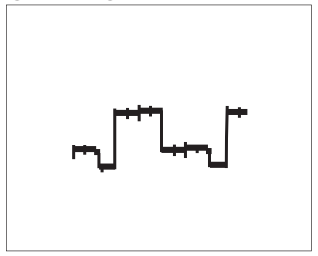
1.5 Vp-p (H)

❺ IC308 ②



1.5 Vp-p (H)

❻ IC307 ②

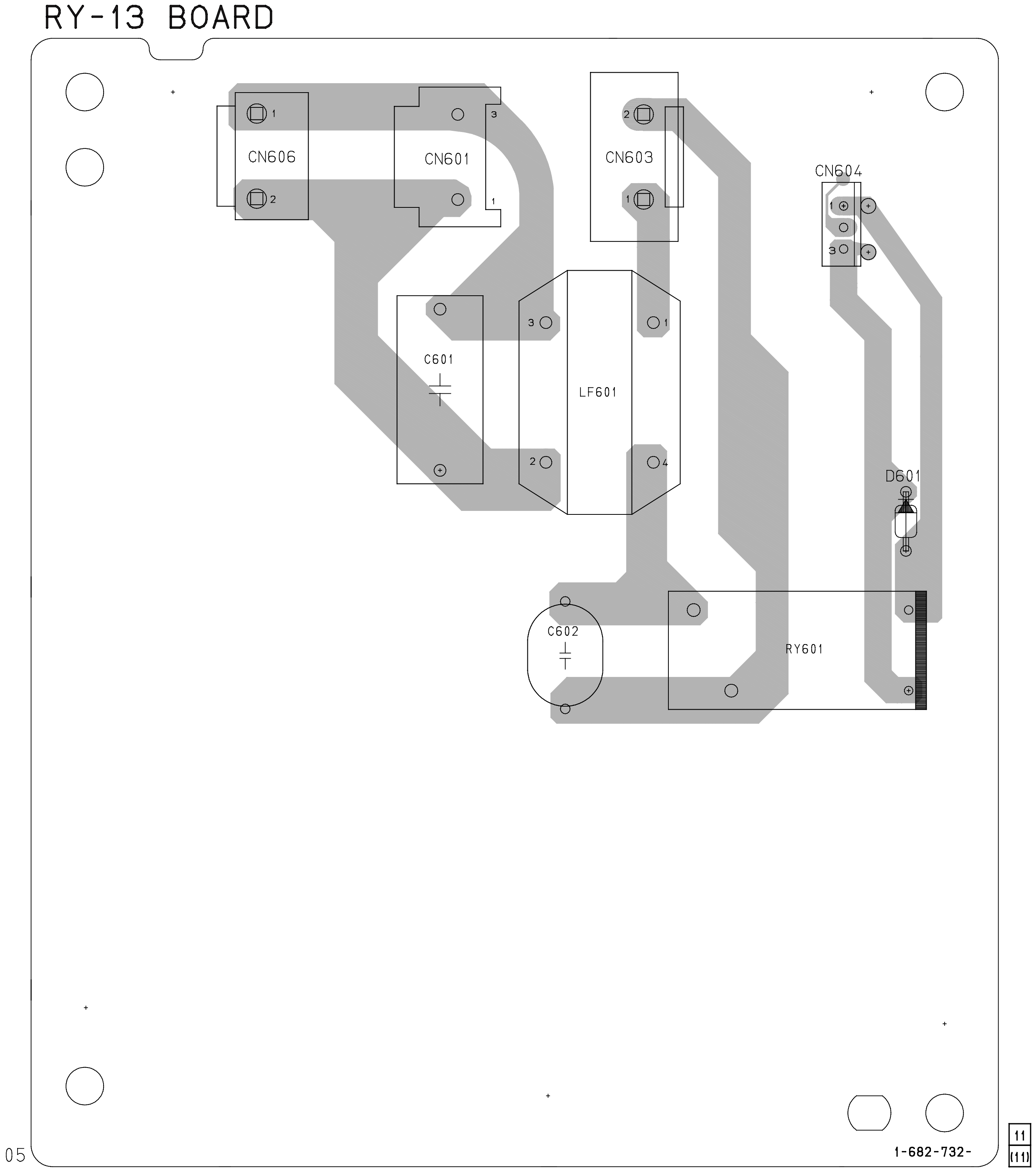


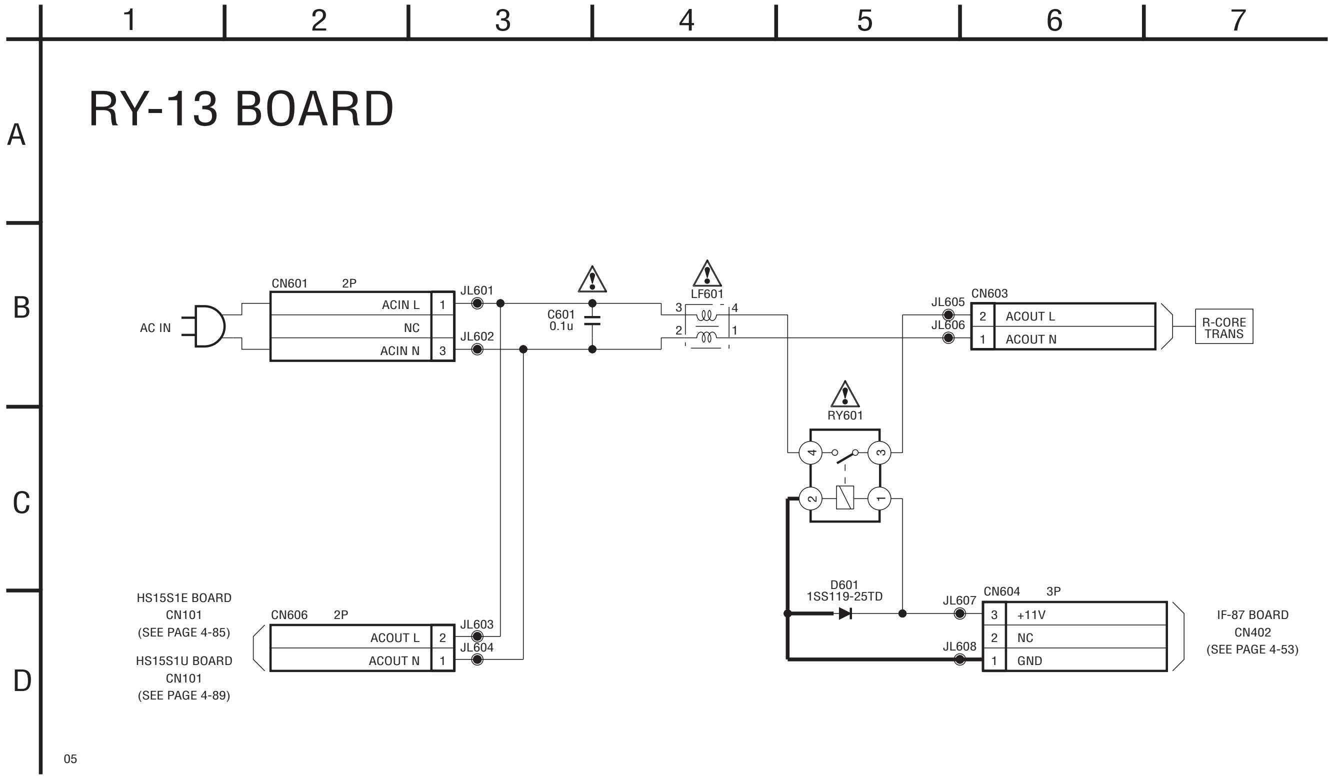
1.5 Vp-p (H)

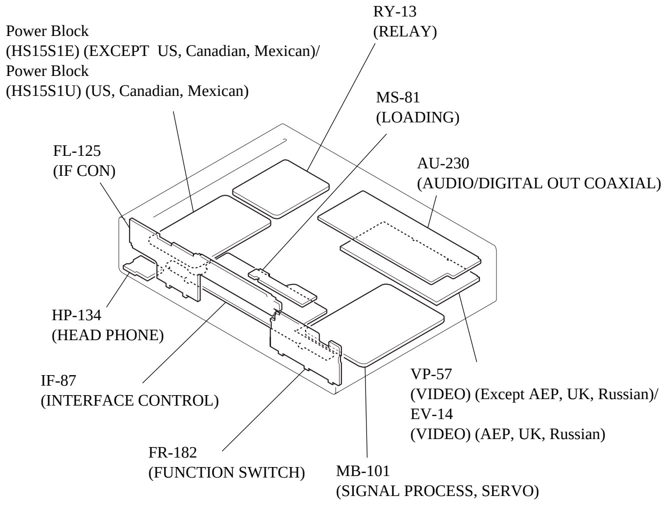
RY-13 (RELAY) PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM

– Ref. No.: RY-13 board; 1,000 series –

There are a few cases that the part isn't mounted in this model is printed on this diagram.



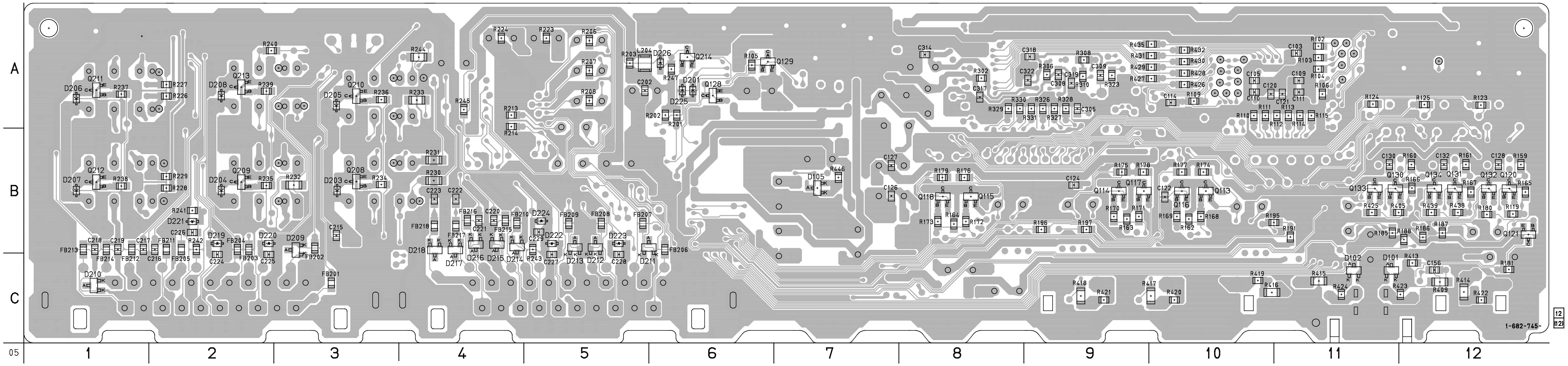




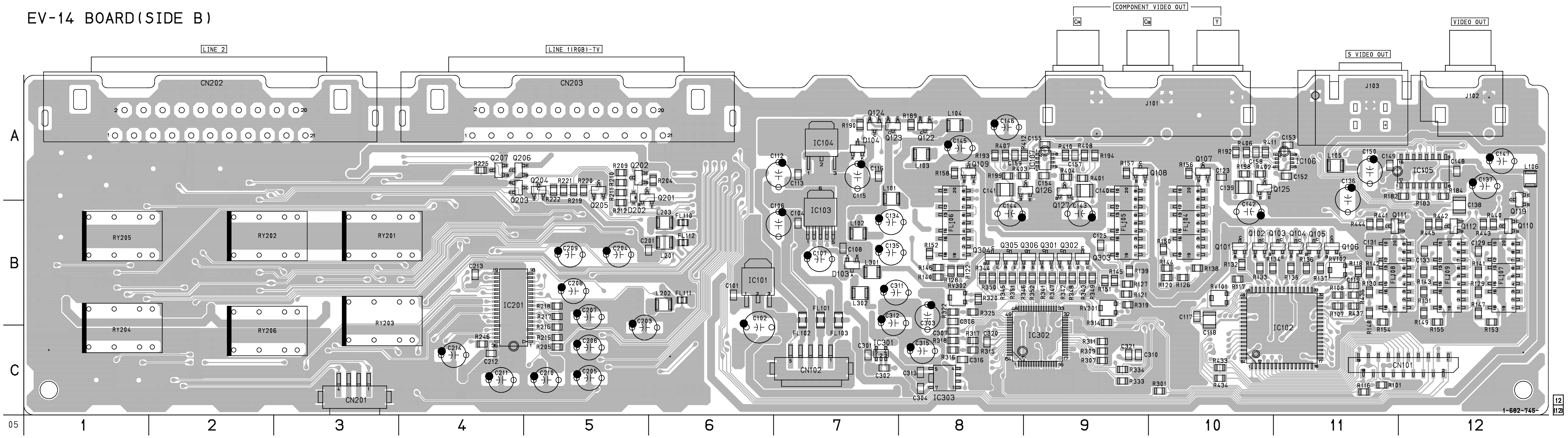
EV-14 (VIDEO) PRINTED WIRING BOARD
– Ref. No.: EV-14 board; 4,000 series –
– AEP, UK, RUS –

There are a few cases that the part isn't mounted in this model is printed on this diagram.

EV-14 BOARD(SIDE A)



EV-14 BOARD(SIDE B)



EV-14 (VIDEO ENCODER) SCHEMATIC DIAGRAM

– Ref. No.: EV-14 board; 4,000 series –

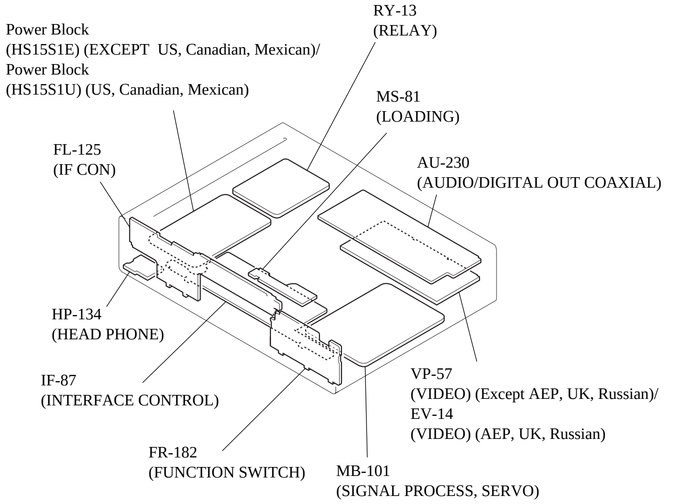
– AEP, UK, RUS –

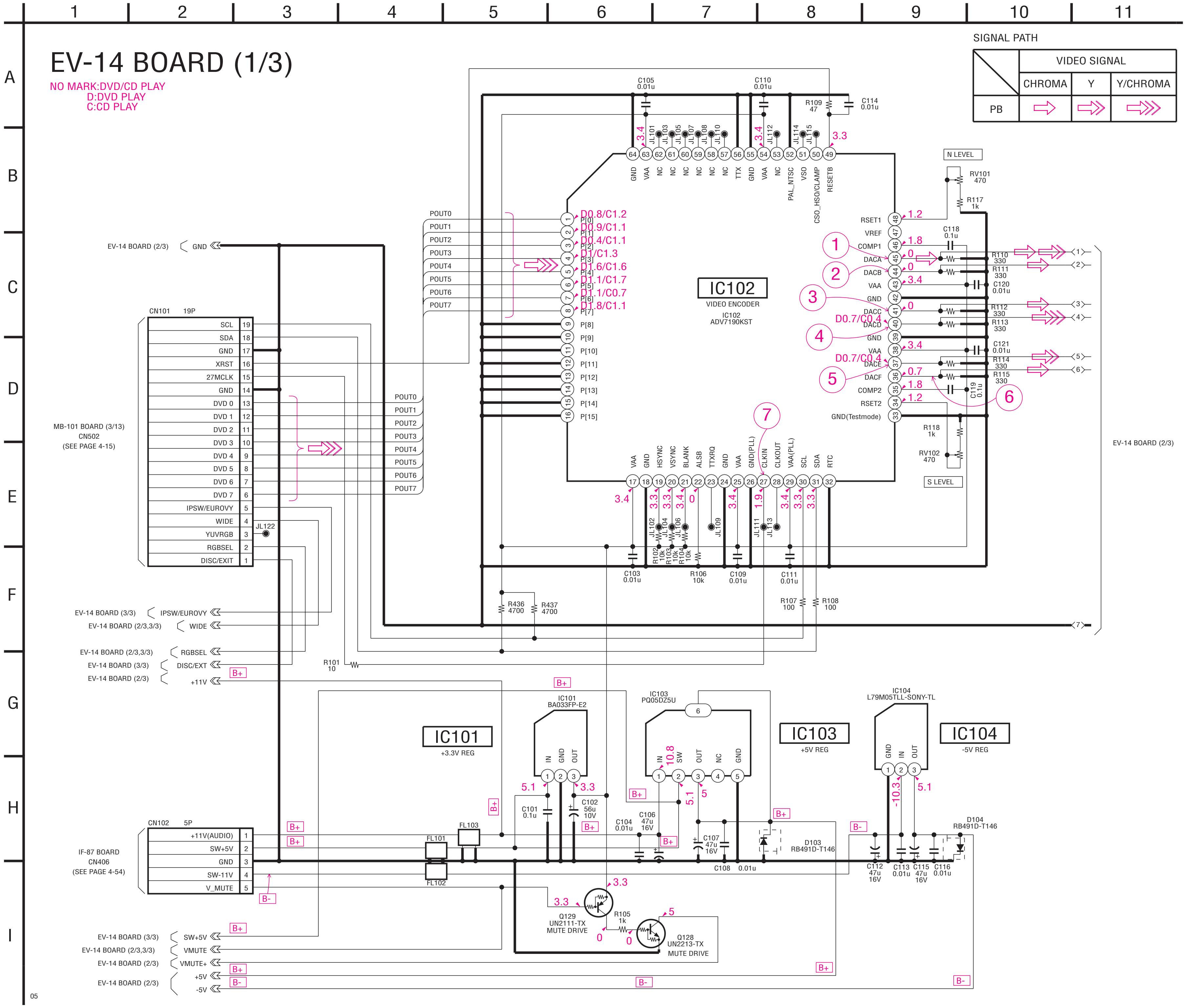
EV-14 BOARD (SIDE A)

D101	C-11
D102	C-11
D201	A-6
D203	B-3
D204	B-2
D205	A-3
D206	A-1
D207	B-1
D208	A-2
D209	C-3
D210	C-1
D211	B-5
D212	B-5
D213	B-5
D214	B-4
D215	B-4
D216	B-4
D217	B-4
D218	B-4
D220	B-2
D221	B-2
D223	B-5
D224	B-5
D225	A-6
D226	A-6
Q113	B-10
Q114	B-9
Q115	B-8
Q116	B-10
Q117	B-9
Q118	B-8
Q120	B-12
Q121	B-12
Q128	A-6
Q129	A-6
Q130	B-11
Q131	B-12
Q132	B-12
Q133	B-11
Q134	B-12
Q208	B-3
Q209	B-2
Q210	A-3
Q211	A-1
Q212	B-1
Q213	A-2
Q214	A-6

EV-14 BOARD (SIDE B)

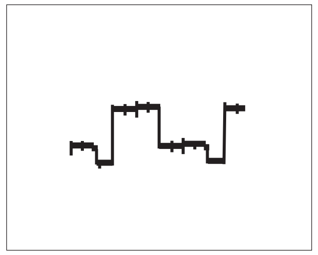
CN101	C-11
CN102	C-7
CN201	C-3
CN202	A-2
CN203	A-5
D103	B-7
D104	A-7
D202	B-5
IC101	B-6
IC102	C-11
IC103	B-7
IC104	A-7
IC105	A-12
IC106	A-11
IC107	A-9
IC201	B-4
Q101	B-10
Q102	B-10
Q103	B-11
Q104	B-11
Q105	B-11
Q106	B-11
Q107	A-10
Q108	A-9
Q109	A-8
Q110	B-12
Q111	B-11
Q112	B-12
Q119	B-12
Q122	A-8
Q123	A-7
Q124	A-7
Q125	A-10
Q126	A-8
Q127	A-9
Q201	B-5
Q202	A-5
Q203	B-4
Q204	A-4
Q205	B-5
Q206	A-4
Q207	A-4





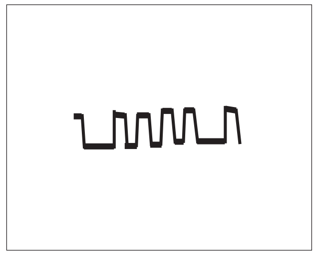
• Waveforms

❶ IC102 ㊺



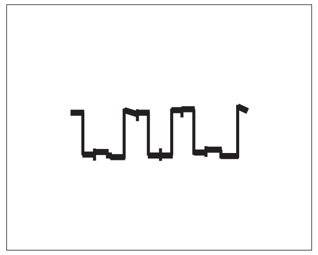
830 mVp-p (H)

❷ IC102 ㊹



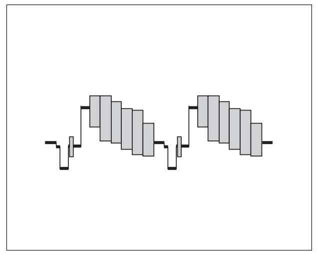
810 mVp-p (H)

❸ IC102 ㊶



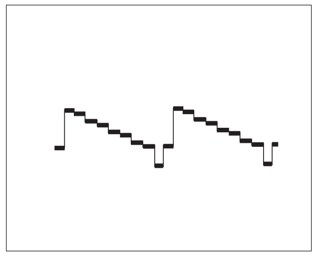
810 mVp-p (H)

❹ IC102 ㊵



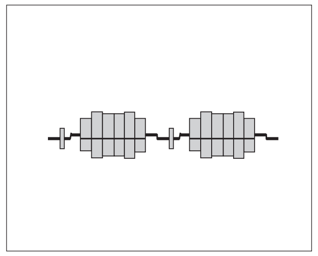
1.2 Vp-p (H)

❺ IC102 ㊲



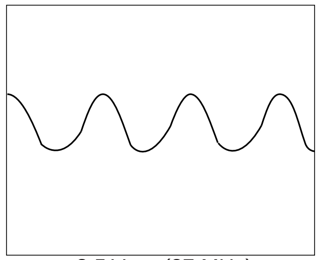
990 mVp-p (H)

❻ IC102 ㊱



860 mVp-p (H)

❼ IC102 ㉗

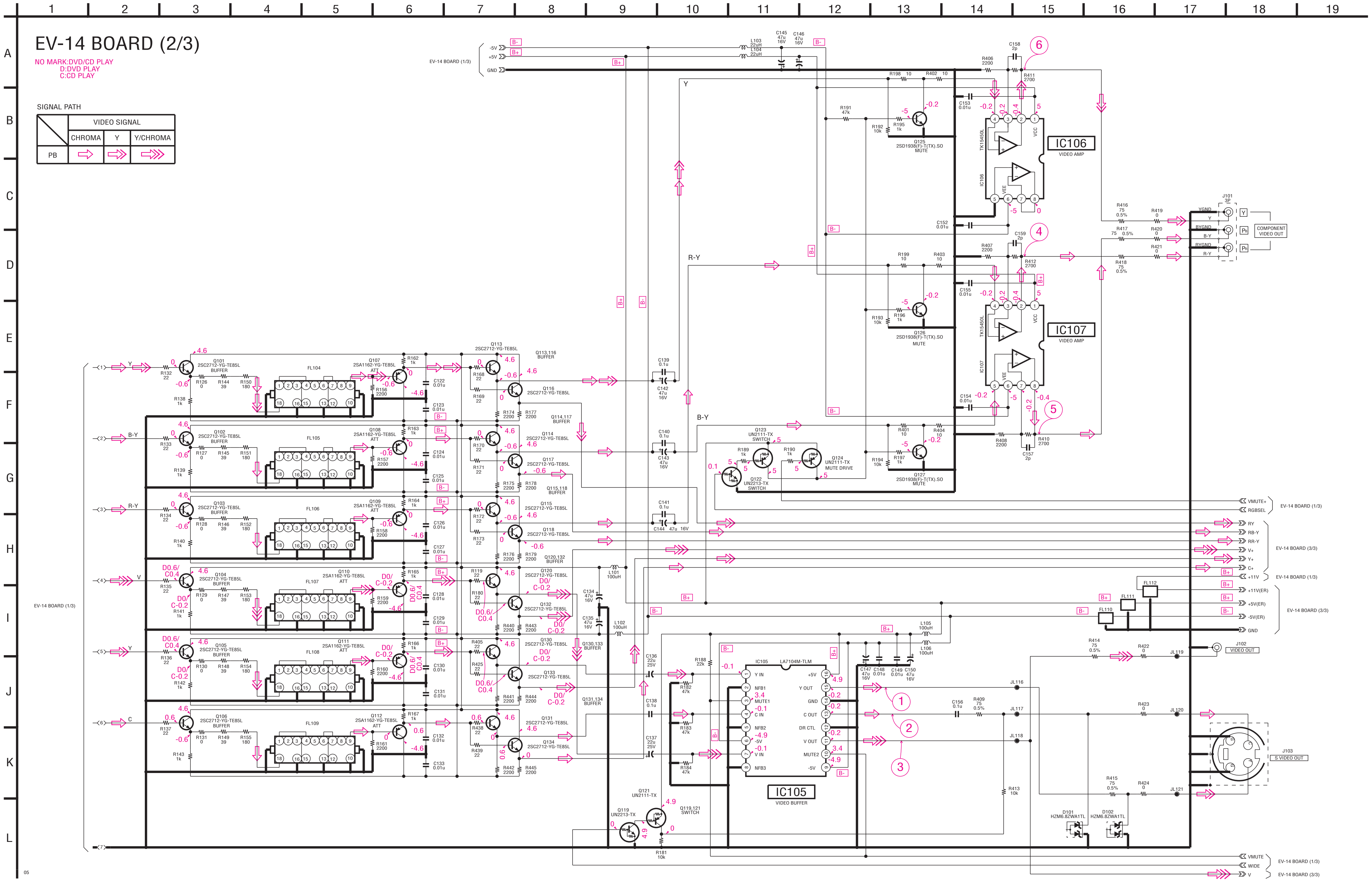


3.5 Vp-p (27 MHz)

EV-14 (VIDEO BUFFER) SCHEMATIC DIAGRAM • **See page 4-75 for printed wiring board.**

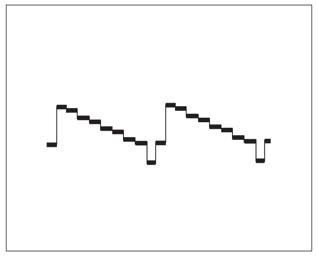
– Ref. No.: EV-14 board; 4,000 series –

– AEP, UK, RUS –



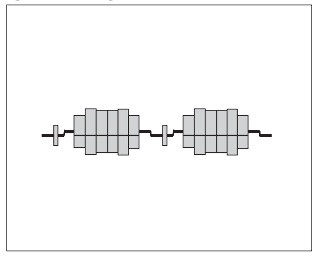
• Waveforms

❶ IC105 ⑮



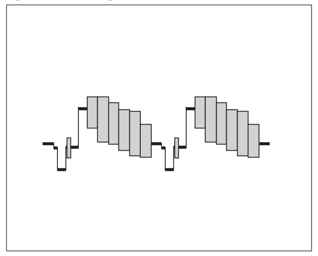
2.2 Vp-p (H)

❷ IC105 ⑬



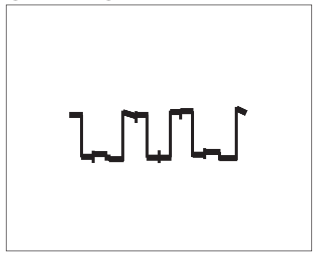
1.8 Vp-p (H)

❸ IC105 ⑪



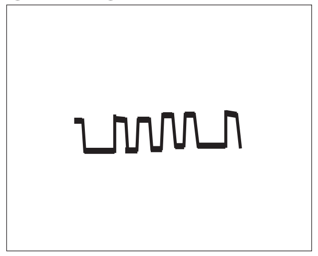
2.4 Vp-p (H)

❹ IC107 ②



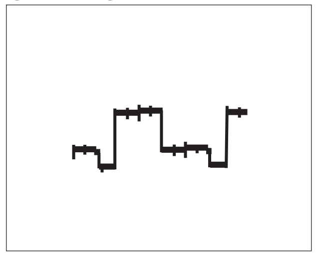
1.5 Vp-p (H)

❺ IC107 ⑧



1.5 Vp-p (H)

❻ IC106 ②

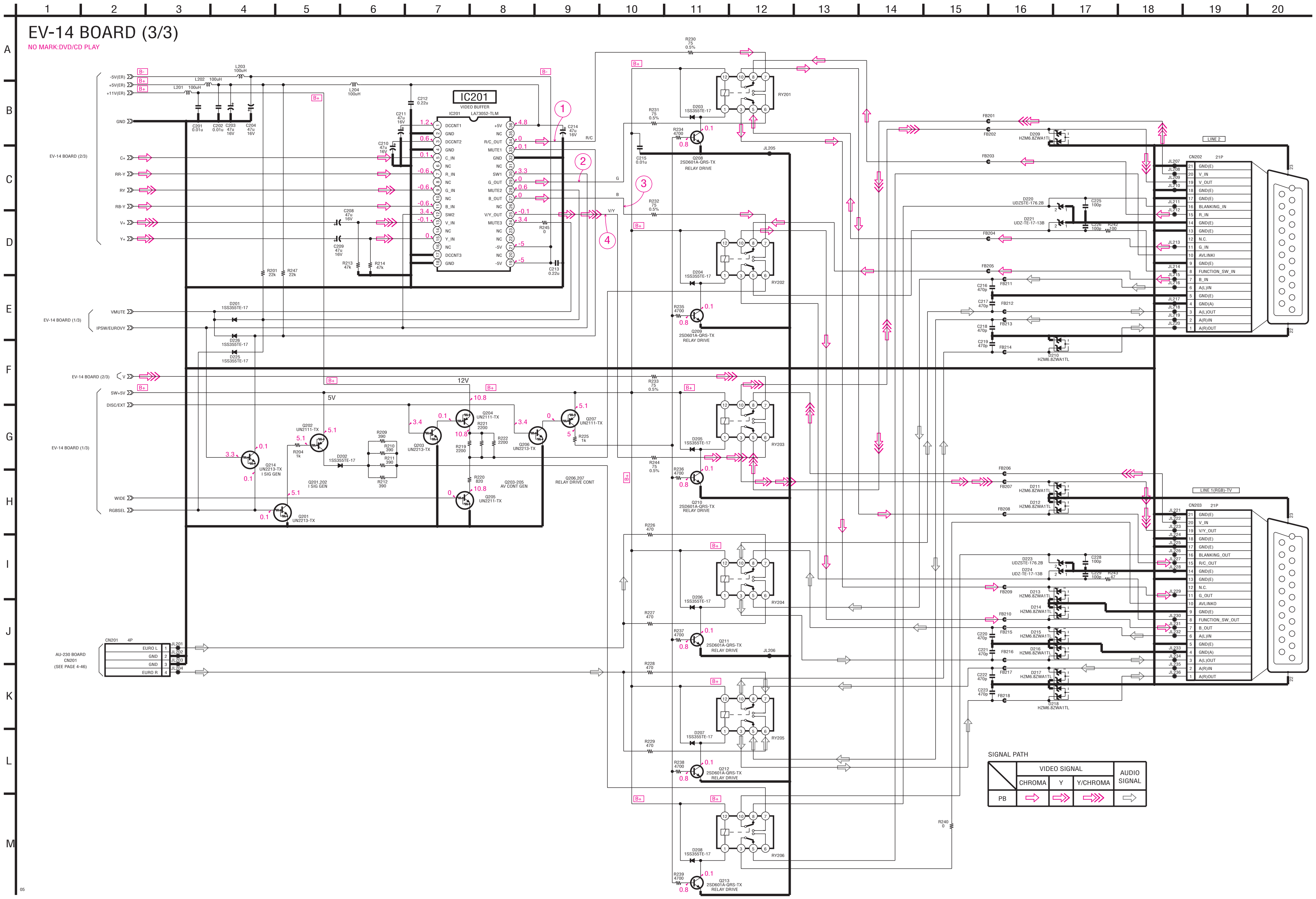


1.5 Vp-p (H)

EV-14 (EURO AV) SCHEMATIC DIAGRAM • See page 4-75 for printed wiring board.

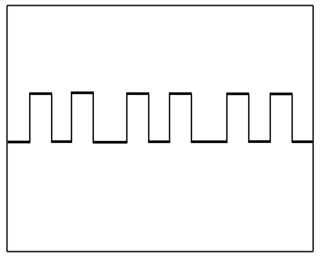
– Ref. No.: EV-14 board; 4,000 series –

– AEP, UK, RUS –



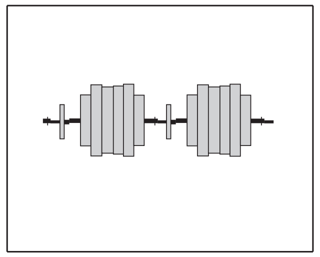
• Waveforms

❶ IC201 ㉞ (LINE : RGB mode)



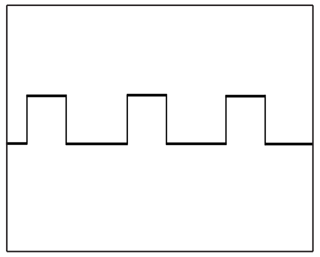
1.4 Vp-p (H)

❶ IC201 ㉞ (LINE : S VIDEO mode)



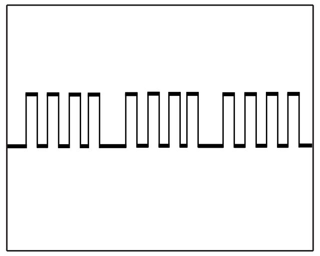
1.7 Vp-p (H)

❷ IC201 ㉙ (LINE : RGB mode)



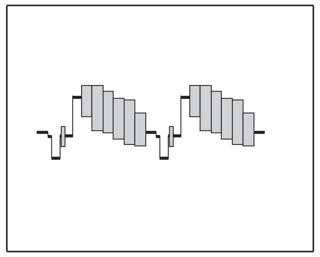
1.4 Vp-p (H)

❸ IC201 ㉗ (LINE : RGB mode)



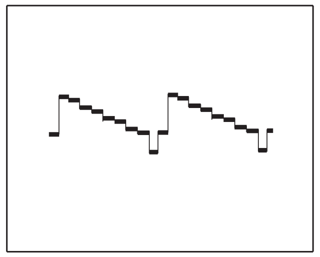
1.4 Vp-p (H)

❹ IC201 ㉕



2.4 Vp-p (H)

❹ IC201 ㉕ (LINE : S VIDEO mode)



2.0 Vp-p (H)

HS15S1E (SWITCHING REGULATOR) PRINTED WIRING BOARD

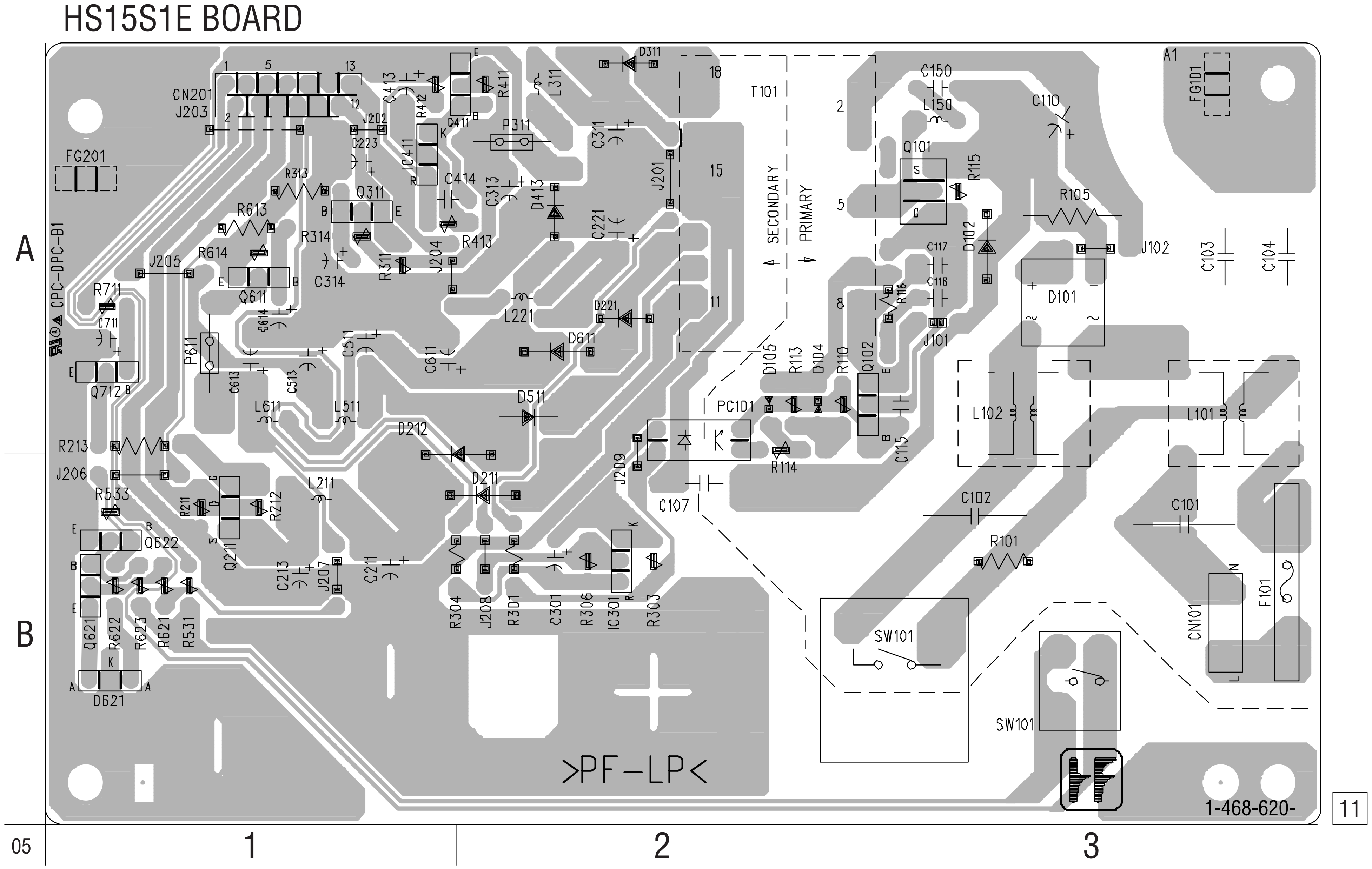
– Ref. No.: HS15S1E board; 3,000 series –

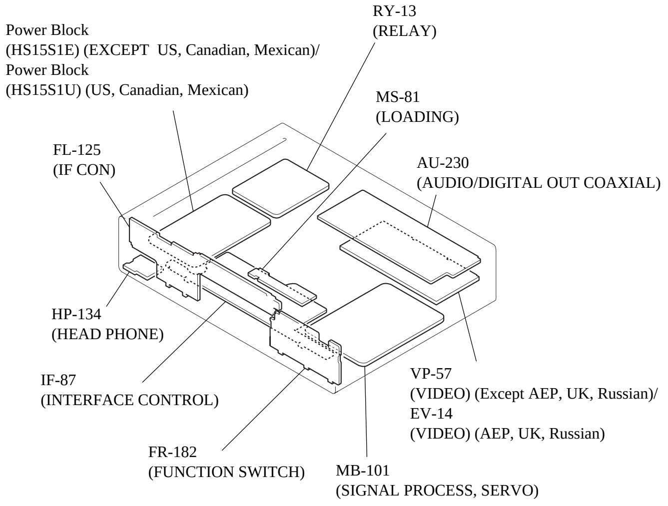
– AEP, UK, HK, KR, RUS –

There are a few cases that the part isn't mounted in this model is printed on this diagram.

HS15S1E BOARD

CN101	B-3
CN201	A-1
D101	A-3
D104	A-2
D105	A-2
D211	B-2
D212	A-1
D221	A-2
D311	A-2
D413	A-2
D511	A-2
D611	A-2
D621	B-1
IC301	B-2
IC411	A-1
Q101	A-3
Q102	A-2
Q211	B-1
Q311	A-1
Q411	A-2
Q611	A-1
Q621	B-1
Q622	B-1
Q712	A-1



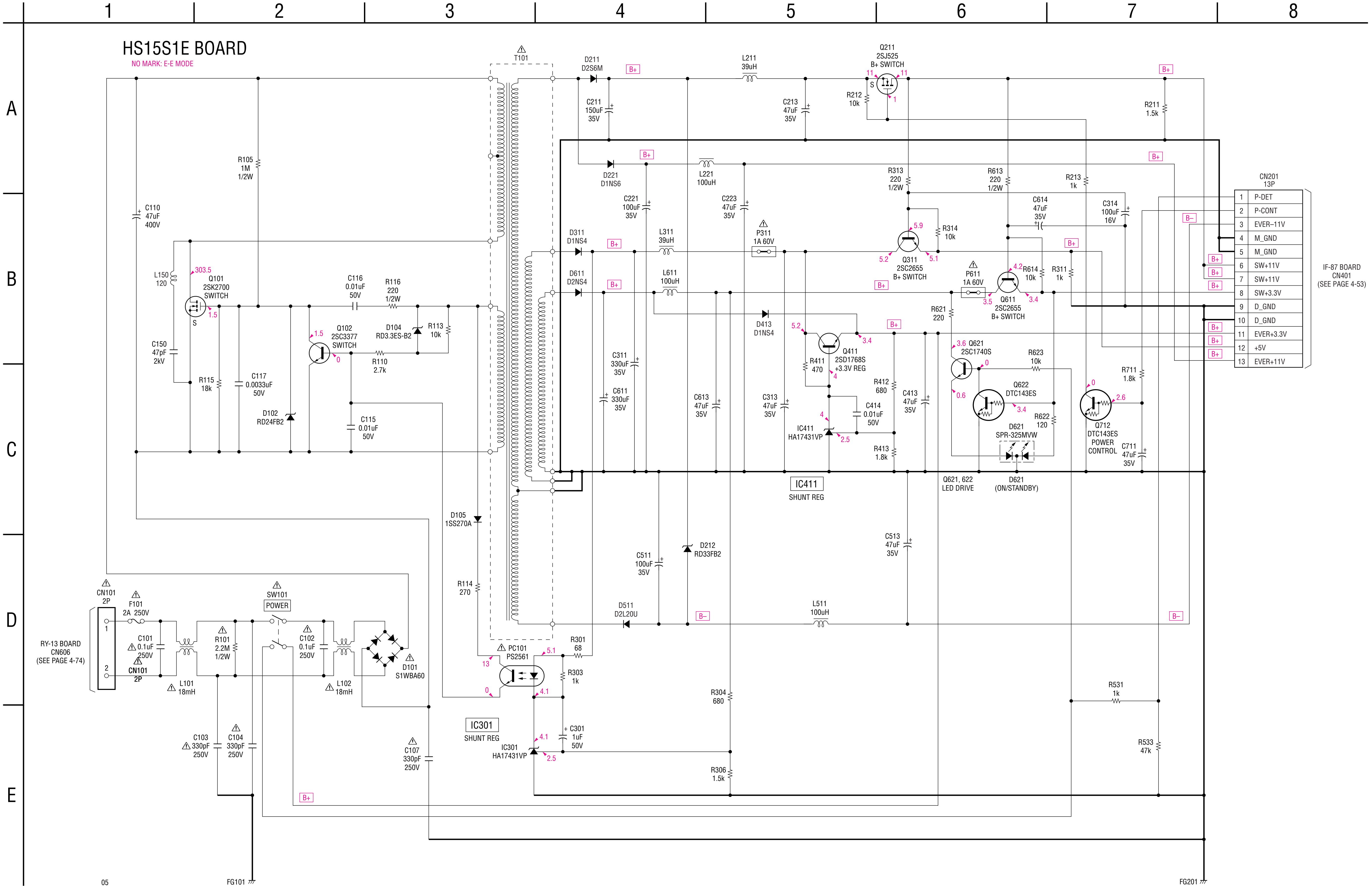


HS15S1E (SWITCHING REGULATOR) SCHEMATIC DIAGRAM

– Ref. No.: HS15S1E board; 3,000 series –

– AEP, UK, HK, KR, RUS –

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.



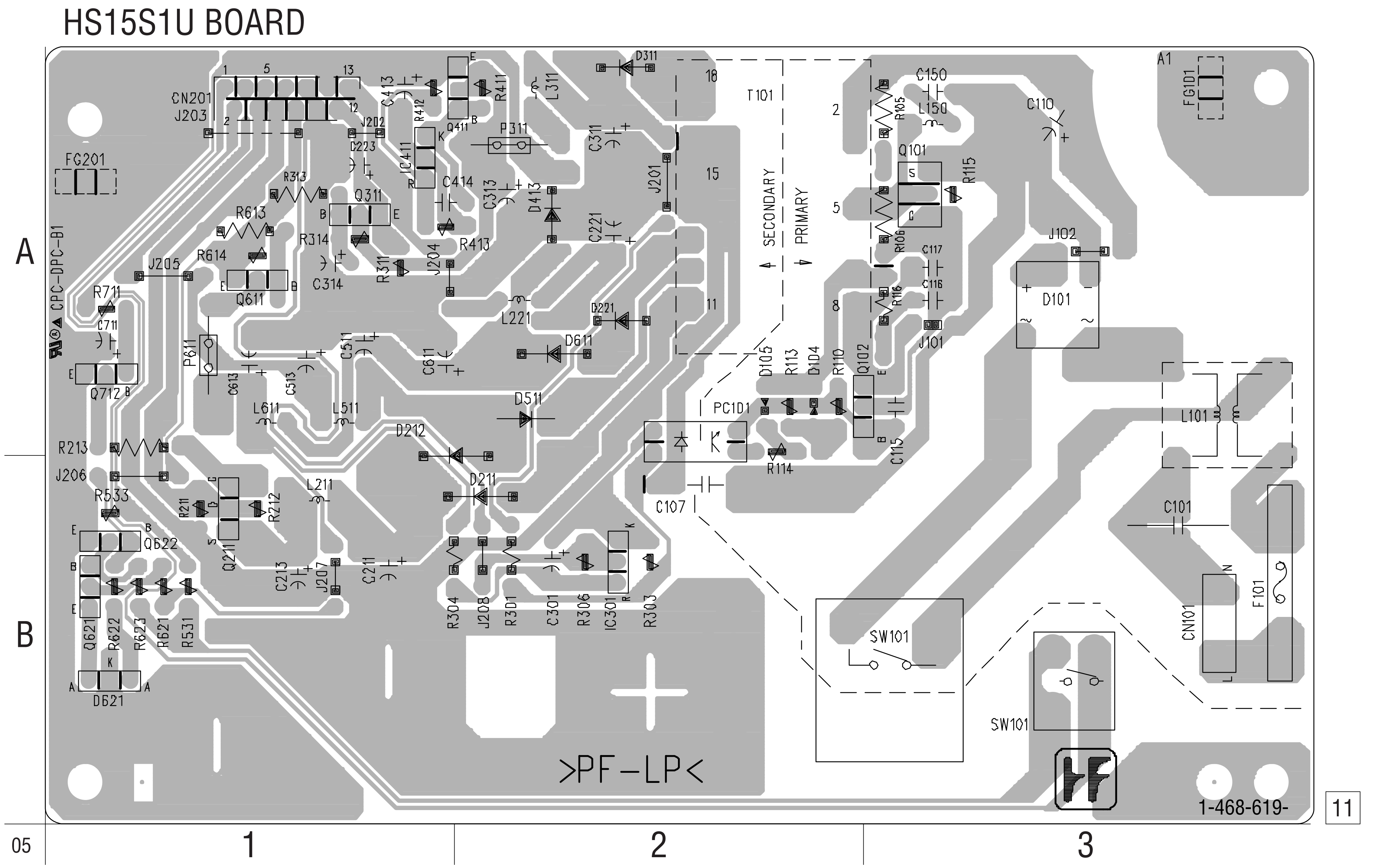
SWITCHING REGULATOR
HS15S1E

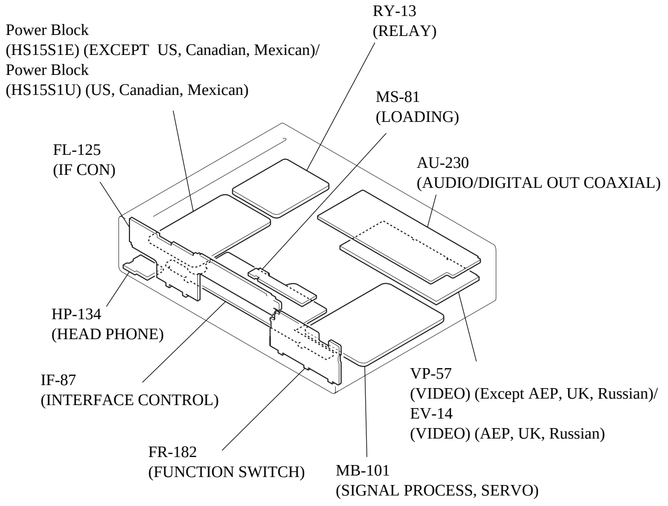
HS15S1U (SWITCHING REGULATOR) PRINTED WIRING BOARD
– Ref. No.: HS15S1U board; 5,000 series –
– US, CND, MX –

There are a few cases that the part isn't mounted in this model is printed on this diagram.

HS15S1U BOARD

CN101	B-3
CN201	A-1
D101	A-3
D104	A-2
D105	A-2
D211	B-2
D212	A-1
D221	A-2
D311	A-2
D413	A-2
D511	A-2
D611	A-2
D621	B-1
IC301	B-2
IC411	A-1
Q101	A-3
Q102	A-2
Q211	B-1
Q311	A-1
Q411	A-2
Q611	A-1
Q621	B-1
Q622	B-1
Q712	A-1



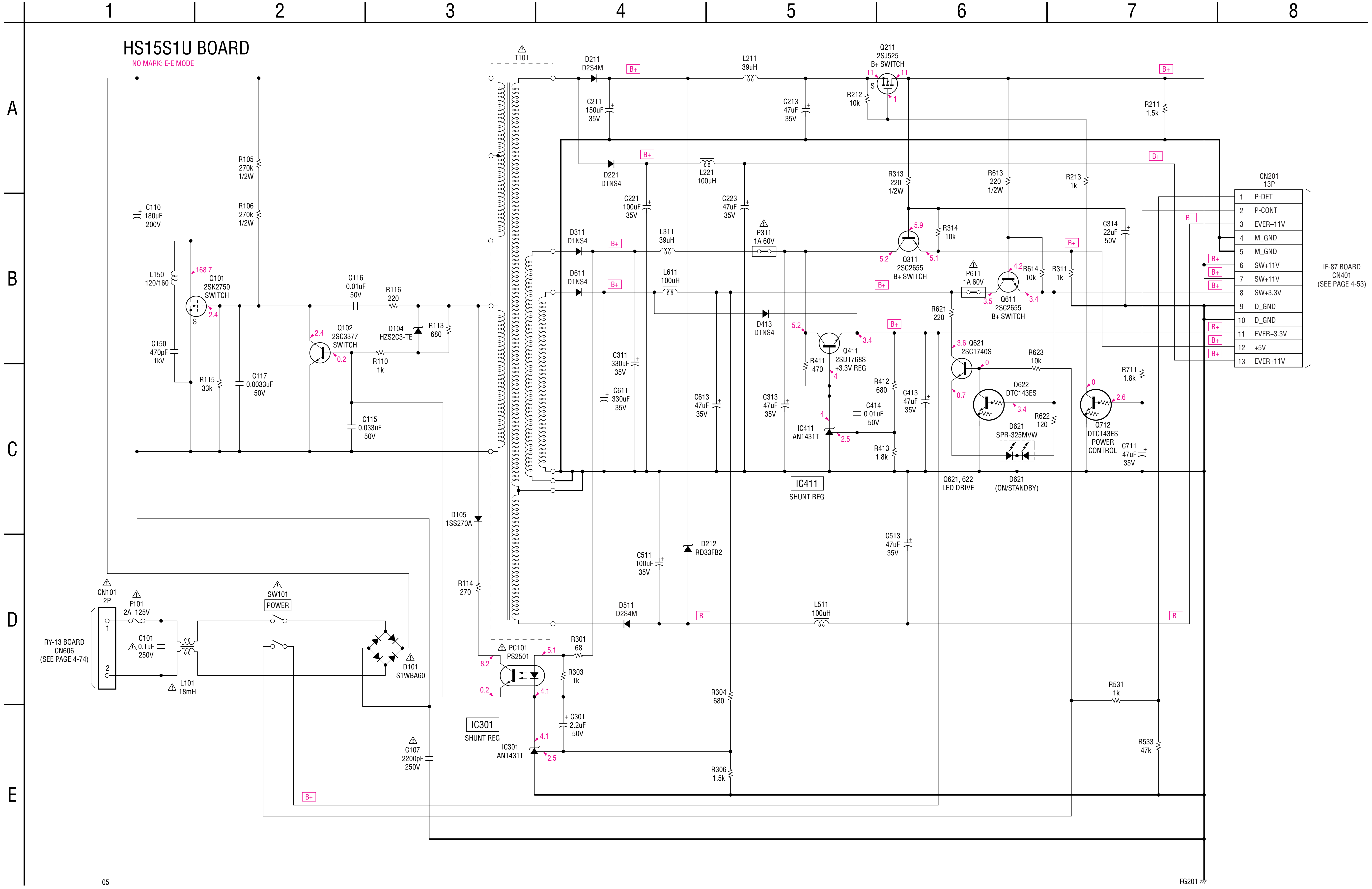


HS15S1U (SWITCHING REGULATOR) SCHEMATIC DIAGRAM

– Ref. No.: HS15S1U board; 5,000 series –

– US, CND, MX –

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.



SECTION 5
IC PIN FUNCTION DESCRIPTION

5-1. SYSTEM CONTROL PIN FUNCTION (MB-101 BOARD IC104)

Pin No.	Pin name	I/O	Function
1-5	HA17-HA21	O	Address bus A17-A21
6	HA22	-	Not used
7	WP	O	Write control signal output to EEPROM
8	XSACS	O	Chip select signal output to SACD DECODER
9	AVCC	-	Power supply
10	AVRH	-	Reference power supply (+3.3 V)
11	AVSS	-	Ground
12	AN0	I	Set of mode 0
13	AN1	I	Set of mode 1
14	AN2	I	Set of mode 2
15	AN3	I	Set of mode 3
16	INT0	I	Input of interrupt from AV DEC
17	INT1	I	Input of interrupt from ARP
18	INT2	I	Input of interrupt from servo DSP
19	INT3	-	Not used
20	INT4	I	Input of interrupt from IF CON
21	INT5	-	Not used
22	INT6	-	Not used
23	INT7	-	Not used
24	VCC	-	Power supply
25	SI0	I	Serial data input from IF CON
26	SO0	O	Serial data output to IF CON
27	SC0	O	Serial clock output to IF CON
28	SI1	I	Serial bus 1 (for data input)
29	SO1	O	Serial bus 1 (for data output)
30	SC1	O	Serial clock output
31	SI2	I	Serial bus 2 (for data input)
32	SO2	O	Serial bus 2 (for data output)
33	YUV RGB	O	YUV/RGB select signal output (YUV: H, RGB: L)
34	VSS	-	Ground
35	XRST	O	System reset signal output
36	XARPRST	O	Reset signal output for ARP
37	RGBSEL	O	RGB signal select signal output/Mic mute signal output
38	SDA	I/O	I2C bus seria data input/output

Pin No.	Pin name	I/O	Function
39	SCL	O	I2C bus serial clock output
40	DVD SACD	O	DVD/SACD select signal output (DVD: L, SACD: H)
41	EUROV	O	EURO V/Y select signal output/Mute signal output to video buffer
42	DISCEXT	O	Line input select signal output (DISC: “H”, EXT: “ L”)
43	MD0	I	Input of mode select 0 (fixed at “ H”)
44	MD1	I	Input of mode select 1 (fixed at “ L”)
45	MD2	I	Input of mode select 2 (fixed at “ L”)
46	DREQ0	I	Input of DMA-REQ 0 from AV DEC
47	DACK0	O	Output of DMA-ACK 0 to AV DEC
48	XDRVMUTE	O	Drive mute signal output
49	DREQ1	I	Input of DMA-REQ 1 from AV DEC
50	DACK1	O	Output of DMA-ACK 1 to AV DEC
51	XIFCS	O	Chip select signal to IF CON
52	VSS	-	Ground
53	X1	O	Clock output (16.5 MHz)
54	X2	I	Clock input (16.5 MHz)
55	VCC	-	Power supply
56	CKSW1	I	Chuck sensor input
57	OCSW1	I	Tray sensor input
58	CS0X	O	External ROM chip select signal output
59	CS1X	-	Not used
60	CS2X	O	Chip select signal output (for AV DEC)
61	CS3X	O	Chip select signal output (for AV DEC)
62	CS4X	O	Chip select signal output (for ARP)
63	CS5X	O	Chip select signal output (for servo DSP)
64	C	-	Capacitor (0.1uF) connect between ground
65	CS6X	-	Not used
66	CS7X	-	Not used
67	XWAIT	I	Wait signal input
68	BGRNTX	-	Test terminal (fixed at “H”)
69	BRQ	-	Test terminal
70	XRD	O	Read enable signal output

Pin No.	Pin name	I/O	Function
71	XWRH	O	High byte write enable signal output (16 bit and 8 bit)
72	XWRL	-	Not used
73	NMIX	-	Not used (fixed at “H”)
74	HSTX	-	Not used (fixed at “H”)
75	VSS	-	Ground
76	XFRRST	I	Reset signal input from IF CON
77	CPUCK	O	CPU clock signal output
78	XBMCS	O	Chip select signal output to DSD_DSP
79	XDACS	O	Chip select signal output to DAC (2ch, 6ch)
80	VESCS/X39CS	O	Chip select signal output to DSP
81	48/44.1K	O	PLL FS control signal output
82	WIDE	O	WIDE select signal output
83	MAMUTE	O	Audio mute signal output
84	XLDON	O	LD control signal output
85-92	HD0-HD7	I/O	Data bus D0-D7 (16 bit only)
93-100	HD8-HD15	I/O	Data bus D8-D15 (16 bit) , D0-D7 (8 bit)
101	VSS	-	Ground
102-109	HA0-HA7	O	Address bus A00-A07
110	VCC	-	Power supply
111-118	HA8-HA15	O	Address bus A08-A15
119	VSS	-	Ground
120	HA16	O	Address bus A16

SECTION 6
TEST MODE

6-1. GENERAL DESCRIPTION

The Test Mode allows you to make diagnosis and adjustment easily using the remote commander and monitor TV. The instructions, diagnostic results, etc. are given on the on-screen display (OSD).

Note: Since the remote commander belongs to this model has no number buttons, use other DVD remote commander with number buttons on it.

6-2. STARTING TEST MODE

Press the [TITLE], [CLEAR], [POWER] keys on the remote commander in this order with the power of main unit in OFF status, and the Test Mode starts, then "DIAG START" will be displayed on the fluorescent display tube and the menu shown below will be displayed on the TV screen. At the bottom of menu screen, the model name and revision number are displayed. Last Off at the lower right of screen indicates the information code concerning the last power off.
To execute each function, select the desired menu and press its number on the remote commander.
To exit from the Test Mode, press the [POWER] key.

```
          Test Mode Menu

0. Syscon Diagnosis
1. Drive Auto Adjustment
2. Drive Manual Operation
3. Mecha Aging
4. Emergency History
5. Version Information
6. Video Level Adjustment
               Exit: POWER Key
_
Model    : DPX-144xxx
Revision : 1.xxxx   Last Off: xx
```

Power Off Information Code List

00 : Primary Power Off
01 : Power Off Request from SYSTEM CONTROL
02 : Power Off by Emergency Power Off Command from SYSTEM CONTROL
(if information is sent from SYSTEM CONTROL)
03 : IF CON Judged that SYSTEM CONTROL is Faulty
04 : Power Off from Diagnosis Mode of IF CON
05 : Forced Power Off by the User
06 : Power Off by Power Supply Voltage Monitor

6-3. SYSCON DIAGNOSIS

The same contents as board detail check by serial interface can be checked from the remote commander.
On the Test Mode Menu screen, press [0] key on the remote commander, and the following check menu will be displayed.

```
    ### Syscon Diagnosis ###
           Check Menu
0. Quit
1. All
2. Version
3. Peripheral
4. Servo
5. Supply
6. AV Decoder
7. Video
8. Audio
_
```

0. Quit

Quit the Syscon Diagnosis and return to the Test Mode Menu.

1. All

All items continuous check
This menu checks all diagnostic items continuously. Normally, all items are checked successively one after another automatically unless an error is found, but at a certain item that requires judgment through a visual check to the result, the following screen is displayed for the key entry.

```
    ### Syscon Diagnosis ###

         Diag All Check
         No. 2 Version

 2-3. ROM Check Sum
Check Sum = xxxx


Press NEXT Key to Continue
Press PREV Key to Repeat
_
```

For the ROM Check, the check sum calculated by the Syscon is output, and therefore you must compare it with the specified value for confirmation.
Following the message, press [NEXT] key to go to the next item, or [PREV] key to repeat the same check again. To quit the diagnosis and return to the Check Menu screen, press [STOP] or [ENTER] key. If an error occurred, the diagnosis is suspended and the error code is displayed as shown below.

```
    ### Syscon Diagnosis ###



 3-3. EEPROM Check
Error 03: EEPROM Write/Reed N
Address    : 00000001
Write Data : 2492
Read Data  : 2490
Press NEXT Key to Continue
Press PREV Key to Repeat
_
```

Press [STOP] key to quit the diagnosis, or [PREV] key to repeat the same item where an error occurred, or [NEXT] key to continue the check from the item next to faulty item.

Submenu

Selecting 2 and subsequent items calls the submenu screen of each item.
For example, if “5. Supply” is selected, the following submenu will be displayed.

```
    ### Syscon Diagnosis ###
          Check Menu
         No. 5 Supply
0. Quit
1. All
2. ARP Register Check
3. ARP to RAM Data Bus
4. ARP to RAM Address Bus
5. ARP RAM Check
_
```

0. Quit
Quit the submenu and return to the main menu.

1. All
All submenu items continuous check.
This menu checks 2 and subsequent items successively. At the item where visual check is required for judgment or an error occurred, the checking is suspended and the message is output for key entry. Normally, all items are checked successively one after another automatically unless an error is found.
Selecting 2 and subsequent items executes respective menus and outputs the results.
For the contents of each submenu, see “General Description of Checking Method” and “Check Items List”.

General Description of Checking Method

2. Version
(2-2) Revision
ROM revision number is displayed.
Error: Not detected.
The revision number defined in the source file of ROM (IC106 or 107) is displayed with four digits.

(2-3) ROM Check Sum
Check sum is calculated.
Error: Not detected.
8-bit data are added up to the ROM (IC106 or 107) address 0x000F0000 to 0x002EFFFF, and the result is displayed with 4-digit hexadecimal number. Error is not detected. Compare the result with the specified value.

(2-4) Model Type
Model code is displayed.
Error: Not detected.
The model code read from the EEPROM is displayed with 2-digit hexadecimal number.

	Model Type	
US, CND	0	0
MX	0	2
AEP (DPX1441BM, DPX1441SM), UK	0	3
AEP (DPX1445BM, DPX1445NM)	0	4
RUS	0	5
HK, KR	0	7

- Abbreviation
  CND : Canadian
  HK : Hong Kong
  KR : Korea
  RUS : Russian
  MX : Mexican

- Description about model name
  DPX14xxBM
  (B) — Color of set
  B : Black
  H : Titanium gray
  N : Gold
  S : Silver

(2-5) Region
Region code is displayed.
Error: Not detected.
The region code determined from the model code is displayed.

3. Peripheral
(3-2) EEPROM Check
Data write → read, and accord check
Error 03: EEPROM write/read discord
0x9249, 0x2942 and 0x4294 are written to the address 0x00 to 0xFF of the EEPROM and then read for checking. Before writing, the data are saved, then after checking, they are written to restore the contents of EEPROM.

(3-3) Gate Array Check
Data write → read, and accord check
Error 02: Gate array write/read discord
Data of 0x00 to 0x03FO is written sequentially to the address 0xF and then read for checking.

(3-4) SACD Check
RAM Check (IC806)
Data write → read, and accord check
DSD-DSP Check (IC806)
Mix mode Register read, write check.

4. Servo

(4-2) Servo DSP Check
Data write → read, and accord check
Error 12: Read data discord
0x9249, 0x2942 and 0x4294 are written to the RAM address 0x602 of the Servo DSP and then read for checking. Also, OPT type "1 LASER" or "2 LASER" is displayed.

(4-3) DSP Driver Test
Test signal data → DSP Driver
Error: Not detected.

Caution: Do not perform this checking with the mechanical deck connected.
The maximum voltage is applied to the Servo Driver IC (IC202). If the mechanical deck is connected, it will be destroyed immediately. Following the output message, disconnect the mechanical deck, then enter the specified 4- or 5-digit value from the commander, and press the ENTER key. The test is conducted only if the entered value accords. To exit the test, check the output level, then press NEXT key.
This check is not conducted, but skipped in "All" menu item.

Supplement: How to disconnect mechanical deck
Disconnect flexible flat cables connected to the CN203 and CN204 of MB-101 board. Also, disconnect flat cable from the CN201.

5. Supply

(5-2) ARP Register Check
Data write → read, and accord check
Error 08: ARP register write, and read data discord
Data 0x00 to 0xFF is written sequentially to the ARP TMAX register (address 0xC6) and then read for checking.

(5-3) ARP to RAM Data Bus
Data write → read, and accord check
Error 09: ARP ←→ RAM data bus error
Data 0x0001 to 0x8000 where one bit each is set to 1 are written to the address 0 of RAM (IC303) connected to the ARP (IC302) through the bus, then they are read and checked. In case of discord, written bit pattern and read data are displayed. If data where multiple bits are 1 are read, the bits concerned may touch each other. Further, if data where certain bit is always 1 or 0 regardless of written data, the line could be disconnected or shorted.

(5-4) ARP to RAM Address Bus
Data write → other address read discord check
Error 10: ARP ←→ RAM address bus error
Caution: Address and data display in case of an error is different from the display of other diagnosis (described later).
Before starting the test, all addresses of RAM (IC303) are cleared to 0x0000.
First, 0xA55A is written to the address 0x00000, and the address data are read and checked from addresses 0x00001 to 0x80000 while shifting 1 bit each. Next, the data at that address is cleared, and it is written to the address 0x00001, and read and checked in the same manner. This check is repeated up to the address 0x80000 while shifting the address data by 1 bit each.
If data other than 0 is read at the addresses except written address, an error is given because all addresses were already cleared to 0. In this check, the error display pattern is different from that of other diagnosis; read data, written address, and read address are displayed in this order. However, the message uses same template, and accordingly exchange Address and Data when reading. The following display, for example,

```
   ### Syscon Diagnosis ###



 5-4. ARP to RAM Address Bus
Error 10: ARP - RAM Address B
Address    : 0000A55A
Write Data : 00000000
Read Data  : 00080000
Press NEXT Key to Continue
Press PREV Key to Repeat
_
```

shows the data 0xA55A was read from address 0x00080000 though it was written to the address 0x00000000. This implies that these addresses are in the form of shadow. Also, if the read data is not 0xA55A, another error will be present.

(5-5) ARP RAM Check
Data write → read, and accord check
Error 11: ARP RAM read data discord
The program code data stored in ROM are copied to all areas of RAM (IC303) connected to the ARP (IC302) through the bus, then they are read and checked if they accord. If the detail check was selected initially, the data are written to all areas and read, then the same test is conducted once again with the data where all bits are inverted between 1 and 0. If discord is detected, faulty address, written data, and read data are displayed following the error code 11, and the test is suspended.

6. AV Decoder

(6-2) 1930 RAM
Data write → read, and accord check
Error 13: AVD RAM read data discord
The program code data stored in ROM (IC106 or 107) are copied to all areas of RAM (IC504) connected to the AVD (IC502) through the bus, then they are read and checked if they accord. Further, the same test is conducted once again with the data where all bits are inverted between 1 and 0. If discord is detected, faulty address, written data, and read data are displayed following the error code 13, and the test is suspended.
During the test, OSD display becomes blank as the OSD area is also checked.

(6-3) 1930 SP
ROM → AVD RAM → Video OUT
Error: Not detected.
The data including sub picture streams in ROM (IC107) are transferred to the RAM (IC507) in AVD (IC502), and output as video signals from the AVD (IC502).
Though OSD display becomes blank, the output of video signals continues until the key is pressed.
They are output from all video terminals (Composite, Y/C, Component) except EURO AV terminal.

7. Video

(7-2) Color Bar
AVD color bar command write → Video OUT
Error: Not detected.
The command is transferred to the AVD, and the color bar signals are output from video terminals.
They are output from all video terminals (Composite, Y/C, Component) except EURO AV terminal.

(7-3) Composite Out (AEP, UK, RUS Model)
EURO-AV Composite video output check
AVD color bar command write → Video (EURO-AV Composite) OUT
Error: Not detected.
With the Component of video output turned off, the color bar signals are output from the EURO-AV terminal.

(7-4) Y/C Out (AEP, UK, RUS Model)
EURO-AV Y/C video output check
AVD color bar command write → Video (EURO-AV Y/C) OUT
Error: Not detected.
With the Y/C of video output turned on, the color bar signals are output from the EURO-AV terminal.

(7-5) RGB Out (AEP, UK, RUS Model)
EURO-AV RGB video output check
AVD color bar command write → Video (EURO-AV RGB) OUT
Error: Not detected.
With the RGB of video output turned on, the color bar signals are output from the EURO-AV terminal.

(7-6) Component Out (AEP, UK, RUS Model)
EURO-AV Component video output check
AVD color bar command write → Video (EURO-AV Component) OUT
Error: Not detected.
With the Component of video output turned on, the color bar signals are output from the EURO-AV terminal.

8. Audio

(8-2) ARP → 1930
Error 14 : ARP → 1930 video NG
15 : ARP → 1930 audio NG

(8-3) Test Tone
A pink noise signal is output from the AVD (IC503) through optical coaxial digital terminal and analog audio terminal.
Error: Not detected.
After turning on all outputs, each time the [NEXT] key is pressed, the output channel is switched for individual channel checking.
Left + Right → Left → Right are checked in this order.

Check Items List

2) Version
(2-2) Revision
(2-3) ROM Check Sum
(2-4) Model Type
(2-5) Region

3) Peripheral
(3-2) EEPROM Check
(3-3) Gate Array Check
(3-4) SACD Check

4) Servo
(4-2) Servo DSP Check
(4-3) DSP Driver Test

5) Supply
(5-2) ARP Register Check
(5-3) ARP to RAM Data Bus
(5-4) ARP to RAM Address Bus
(5-5) ARP RAM Check

6) AV Decoder
(6-2) 1930 RAM
(6-3) 1930 SP

7) Video
(7-2) Color Bar
(7-3) Composite Out (AEP, UK, RUS Model)
(7-4) Y/C Out (AEP, UK, RUS Model)
(7-5) RGB Out (AEP, UK, RUS Model)
(7-6) Component Out (AEP, UK, RUS Model)

8) Audio
(8-2) ARP → 1930
(8-3) Test Tone

Error Codes List

00: Error not detected
01: RAM write/read data discord
02: Gate array NG
03: EEPROM NG
04: Flash memory clear error
05: Flash memory write error
06: Flash memory read data discord
07: 2725 read data discord
08: ARP register read data discord
09: ARP ←→ RAM data bus error
10: ARP ←→ RAM address bus error
11: ARP RAM read data discord
12: Servo DSP NG
13: 1930 SDRAM NG
14: ARP → 1930 video NG
15: ARP → 1930 audio NG
16: 1910 UCODE download NG
17: System call error (function not supported)
18: System call error (parameter error)
19: System call error (illegal ID number)
20: System call error (time out)
21: NAND Flash faulty blocks exceed 10
90: Error occurred
91: User verification NG
92: Diagnosis cancelled

6-4. DRIVE AUTO ADJUSTMENT

On the Test Mode Menu screen, press [1] key on the remote commander, and the drive auto adjustment menu will be displayed.

```
   ## Drive Auto Adjustment ##

         Adjustment Menu

0. ALL
1. DVD-SL
2. CD
3. DVD-DL
4. LCD



                    Exit: RETURN
```

Normally, [0] is selected to adjust DVD (single layer), CD, DVD (dual layer), and LCD (SACD) in this order. But, individual items can be adjusted for the case where adjustment is suspended due to an error. In this mode, the adjustment can be made easily through the operation following the message displayed on the screen. Which disc is currently adjusted is displayed on the fluorescent display tube.
The disc used for adjustment must be the one specified for adjustment.

0. ALL

You will be asked if EEPROM data are initialized or not, and for this prompt, select [0] and press the [ENTER] key. First , the servo setting data in EEPROM, Emergency History and Hour Meter are cleared to initialize. Then, 1. DVD-SL disc, 2. CD disc, 3. DVD-DL disc, and 4. LCD disc (SACD disc) are adjusted in this order. Each time one disc was adjusted, it is ejected, and therefore exchange the disc following the message. Though the message to confirm whether the discs is to be adjusted is not displayed except for LCD disk (SACD disk), you can exit the adjustment by pressing the [STOP] button. In adjusting each disc, the mirror time is measured to check the disk type. In the auto adjustment, whether the disc type is correct is not checked unlike conventional models, and accordingly, take care not to insert a different type of disc.

1. DVD-SL (single layer)

Select [1], insert DVD single layer disc, and press [ENTER] key, and the adjustment will be made through the following steps, then adjusted values will be written to the EEPROM.

DVD Single Layer Disc Adjustment Steps

1. SLED TILT Reset
2. Disc Check Memory SL
3. Set Disc Type SL
4. Spdl Start
5. Wait 1 sec
6. LD ON
7. Focus Error Check
8. Focus ON 0
9. Auto Track Offset Adjust L0
10. Trv Level Check
11. Tracking ON
12. Wait 100 msec
13. CLVA ON
14. Wait 500 msec
15. Sled ON
16. Auto Loop Filter Offset Adjust
17. Auto Focus Gain Adjust L0
18. Auto Focus Balance Adjust L0
19. EQ Boost Adjust
20. Auto Loop Filter Offset Adjust
21. RF Level Measure
22. Jitter Disp ON
23. Jitter Memory
24. Jitter Disp OFF
25. Eep Copy Loop Filter Offset
26. All Servo Stop

2. CD

Select [2], insert CD disc, and press [ENTER] key, and the adjustment will be made through the following steps, then adjusted values will be written to the EEPROM.

CD Adjustment Steps

1. Sled Tilt Reset
2. Disc Check Memory CD
3. Set Disc Type CD
4. Spdl Start
5. Wait 1 sec
6. LD ON
7. Focus Error Check
8. Fcs ON 1
9. Auto Track Offset Adjust L0
10. Trv Level Check
11. Tracking ON
12. Wait 100 msec
13. CLVA ON
14. Wait 500 msec
15. Sled ON
16. Auto Loop Filter Offset Adjust
17. Auto Focus Gain Adjust L0
18. Auto Focus Balance Adjust L0
19. Eq Boost Adjust
20. Auto Loop Filter Offset Adjust
21. Auto Track Gain Adjust
22. RF Level Measure
23. Jitter Disp ON
24. Jitter Memory
25. Jitter Disp OFF
26. All Servo Stop

3. DVD-DL (dual layer)

Select [3], insert DVD dual layer disc, and press [ENTER] key, and the adjustment will be made through the following steps, then adjusted values will be written to the EEPROM.

DVD Dual Layer Disc Adjustment Steps

1. Sled Tilt Reset
2. Disc Check Memory DL
3. Set Disc Type DL

Layer 1 Adjust

4. Spdl Start (Wait 1 sec)
5. LD ON
6. Fcs ON 1
7. Auto Track Offset Adjust L1
8. Tracking ON
9. Wait 100 msec
10. Clva ON (Wait 500 msec)
11. Sled ON
12. Auto Focus Gain Adjust L1
13. Auto Focus Balance Adjust L1
14. Eq Boost Adjust L1
15. Auto Track Gain Adjust L1
16. Jitter Disp ON
17. Jitter Memory
18. Jitter Disp Off

Layer 0 Adjust

19. Focus Jump (L1 → L0)
20. Auto Track Offset Adjust L0
21. Tracking ON (Wait 100 msec)
22. Clva ON (Wait 500 msec)
23. Sled ON
24. Auto Focus Gain Adjust L0
25. Auto Focus Balance Adjust L0
26. Eq Boost Adjust L0
27. Auto Track Gain Adjust L0
28. Jitter Disp ON
29. Jitter Memory
30. Jitter Disp OFF
31. All Servo Stop

4. LCD (SACD)

This model does not adjust it because the adjusted data of CD are reflected.

6-5. DRIVE MANUAL OPERATION

On the Test Mode Menu screen, select [2], and the manual operation menu will be displayed. For the manual operation, each servo on/off control and adjustment can be executed manually.

```
   ## Drive Manual Operation ##

          Operation Menu
1. Disc type
2. Servo Control
3. Track/Layer Jump
4. Manual Adjustment
5. Auto Adjustment
6. Memory Check

0. Disc Check Memory

                 Exit: RETURN
```

In using the manual operation menu, take care of the following points. These commands do not provide protection, thus requiring correct operation. The sector address or time code field is displayed when a disc is loaded.

1. Set correctly the disc type to be used on the Disc Type screen.
   The disc type must be set after a disc was loaded.
   The set disc type is cleared when the tray is opened.
2. After power ON, if the Drive Manual Operation was selected, first perform "Reset SLED TILT" by opening 1. Disc Type screen.
3. In case of an alarm, immediately press the [STOP] button to stop the servo operation, and turn the power OFF.

Basic operation (controllable from front panel or remote commander)

[POWER]	Power OFF
[STOP]	Servo stop
[OPEN/CLOSE]	Stop+Eject/Loading
[RETURN]	Return to Operation Menu or Test Mode Menu
[NEXT], [PREV]	Transition between sub modes of menu
[1] to [9], [0]	Selection of menu items
Cursor UP/DOWN	Increase/Decrease in manually adjusted value

0. Disc Check Memory

```
          Disc Check



1. SL Disc Check
2. CD Disc Check
3. DL Disc Check




0. Reset SLED TILT
```

On this screen, the mirror time is measured and written to the EEPROM to check the disc type. First, set a DVD SL disc and press [1], then set a CD disc and press [2], and finally set a DVD DL disc and press [3]. The measured mirror time is displayed respectively.
The adjustment must be executed more than once after default data were written.
Reference value for DVD is from 10 to 20, and for CD, from 28 to 4F. Check that the value of CD is larger than that of DVD. When those values are beyond a range perform this adjustment again.
From this screen, you can go to another mode by pressing [NEXT] or [PREV] key, but you cannot enter this mode from another mode. You can enter this mode from the Operation Menu screen only.

1. Disc Type

```
           Disc Type
1. Disc Type Auto Check
2. DVD SL   12 cm
3. DVD DL   12 cm
4. CD       12cm
5. LCD      12 cm
6. DVD SL   8 cm
7. DVD DL   8 cm
8. CD       8 cm
9. LCD      8 cm
0. Reset SLED TILT
                        EMG. 00
```

On this screen, select the disc type. To select the disc type, press the number of the loaded disc. The selected disc type is displayed at the bottom. Selecting [1] automatically selects and displays the disc type. In case of wrong display, retry "Disc Check Memory". Also, opening the tray causes the set disc type to be cleared. In this case, set the disc type again after loading.
In performing manual operation, the disc type must be set.
Once the disc type has been selected, the sector address or time code display field will appear as shown below. These values are displayed when PLL is locked.

```
           Disc Type
1. Disc Type Auto Check
2. DVD SL   12 cm
3. DVD DL   12 cm
4. CD       12cm
5. LCD      12 cm
6. DVD SL   8 cm
7. DVD DL   8 cm
8. CD       8 cm
9. LCD      8 cm
0. Reset SLED TILT
        SA.------ SI.-- EMG. 00
DVD SL 12 cm
```

Display when DVD SL 12cm disc was selected

```
             Disc Type
1. Disc Type Auto Check
2. DVD SL   12 cm
3. DVD DL   12 cm
4. CD       12cm
5. LCD      12 cm
6. DVD SL   8 cm
7. DVD DL   8 cm
8. CD       8 cm
9. LCD      8 cm
0. Reset SLED TILT
        TC.---:---:--- EMG. 00
CD   12 cm
```

Display when CD 12cm disc was selected

[0] Reset SLED TILT	Reset the Sled and Tilt to initial position.
[1] Disc Type Check	Judge automatically the loaded disc. As the judged result is displayed at the bottom of screen, make sure that it is correct. If Disc Check Memory menu has not been executed after EEPROM default setting, the disc type cannot be judged. In this case, return to the initial menu and make a check for three types of discs (SL, DL, CD).
[2] to [9]	Select the loaded disc. The adjusted value is written to the address of selected disc. No further entry is necessary if [1] was selected.

2. Servo Control

```
           Servo Control
1. LD          Off R. Sled FWD
2. SP          Off L. Sled REV
3. Focus       Off
4. TRK.        Off
5. Sled        Off
6. CLVA        Off
7. FCS. Srch Off


0. Reset SLED TILT
       SA.------ SI.-- EMG. 00
DVD SL 12 cm
```

On this screen, the servo on/off control necessary for replay is executed. Normally, turn on each servo from 1 sequentially and when CLVA is turned on, the usual trace mode becomes active. In the trace mode, DVD sector address or CD time code is displayed. This is not displayed where the spindle is not locked.
The spindle could run overriding the control if the spindle system is faulty or RF is not present. In such a case, do not operate CLVA.

[0] Reset SLED TILT	Reset the Sled and Tilt to initial position.
[1] LD	Turn ON/OFF the laser.
[2] SP	Turn ON/OFF the spindle.
[3] Focus	Search the focus and turn on the focus.
[4] TRK	Turn ON/OFF the tracking servo.
[5] Sled	Turn ON/OFF the sled servo.
[6] CLVA	Turn ON/OFF normal servo of spindle servo.
[7] FCS. Srch	Apply same voltage as that of focus search to the focus drive to check the focus drive system.
[→] Sled FWD	Move the sled outward. Perform this operation with the tracking servo turned off.
[←] Sled REV	Move the sled inward. Perform this operation with the tracking servo turned off.

3. Track/Layer Jump

```
      Tracking/Layer Jump
1. 1Tj FWD    R. Fj (L1 → L0)
2. 1Tj REV    L. Fj (L0 → L1)
3. 2Tj FWD    U. Lj (L1 → L0)
4. 2Tj REV    D. Lj (L0 → L1)
5. NTj FWD
6. NTj REV
7. 500Tj FWD
8. 500Tj REV
9. 10k/20k FWD
0. 10k/20k REV
       SA.------ SI.-- EMG. 00
DVD SL 12 cm
```

On this screen, track jump, etc. can be performed. Only for the DVD-DL, the focus jump and layer jump are displayed in the right field.

[1] 1Tj FWD	1-track jump forward.
[2] 1Tj REV	1-track jump reverse.
[3] 2Tj FWD	2-track jump forward.
[4] 2Tj REV	2-track jump reverse.
[5] NTj FWD	N-track jump forward.
[6] NTj REV	N-track jump reverse.
[7] 500Tj FWD	Fine search forward.
[8] 500Tj REV	Fine search reverse.
[9] 10k/20k FWD	Direct search forward.
[0] 10k/20k REV	Direct search reverse.

– The following commands are valid for DVD-DL disc only –

[→] Fj (L1 → L0)	Focus jump forward. (Trk/Sled Servo OFF)
[←] Fj (L0 → L1)	Focus jump reverse. (Trk/Sled Servo OFF)
[↑] Lj (L1 → L0)	Layer jump forward. (Trk/Sled Servo ON)
[↓] Lj (L0 → L1)	Layer jump reverse. (Trk/Sled Servo ON)

4. Manual Adjustment

```
       Manual Adjustment
1. TRK. Offset
2. Focus Gain
3. TRK. Gain
4. Focus Offset
5. Focus Balance
6. L.F. Offset
7. EQ BOOST
8. GD ADJ
Adjustment : Up/Down
                     Jitter 1D
        SA.------ SI.-- EMG. 00
DVD SL 12 cm
```

On this screen, each item can be adjusted manually. Select the desired number [1] to [8] from the remote commander, and current setting for the selected item will be displayed, then increase or decrease numeric value with [↑] key or [↓] key. This value is stored in the EEPROM. If CLV has been applied, the jitter is displayed for reference for the adjustment.

[1]	TRK. Offset	Adjusts tracking offset.
[2]	Focus Gain	Adjusts focus gain.
[3]	TRK. Gain	Adjusts track gain.
[4]	Focus Offset	Adjusts focus offset.
[5]	Focus Balance	Adjusts focus balance.
[6]	L.F. Offset	Adjusts loop filter offset.
[7]	EQ BOOST	
[8]	GD ADJ	

5. Auto Adjustment

```
        Auto Adjustment
1. Auto TRK. Offset
2. Auto Focus Balance
3. Auto Focus Offset
4. Auto Focus Gain
5. Auto TRK. Gain
6. Auto EQ
7. Auto L.F. Offset
8. Auto Group Delay


        SA.------ SI.-- EMG. 00
DVD SL 12 cm
```

On this screen, each item can be adjusted automatically. Select the desired number [1] to [8] from the remote commander, and selected item is adjusted automatically.

[1]	Auto TRK. Offset	Adjusts tracking offset.
[2]	Auto Focus Balance	Adjusts focus balance.
[3]	Auto Focus Offset	Adjusts focus offset.
[4]	Auto Focus Gain	Adjusts focus gain.
[5]	Auto TRK. Gain	Adjusts track gain.
[6]	Auto EQ	
[7]	Auto L.F. Offset	Adjusts loop filter offset.
[8]	Auto Group Delay	

6. Memory Check

```
EEPROM DATA 1          -- DL --
             CD LCD   SL  L0  L1
Focus Gain    xx xx   xx  xx  xx
TRK. Gain     xx xx   xx  xx  xx
FCS Balance   xx xx   xx  xx  xx
Focus Bias    xx xx   xx  xx  xx
TRV. Offset   xx xx   xx  xx  xx
L.F. Offset   xx xx   xx  xx  xx
EQ Boost      xx xx   xx  xx  xx
Mirror Time   xx --   xx  xx
_
DOWN : Next Data
CLEAR: Default Set    page. 1/2
```

```
EEPROM DATA 2          -- DL --
             CD LCD   SL  L0  L1
RF Jitter     xx --   xx  xx  xx
RF Level      xx --   xx  --  --
FE Level      xx --   xx  --  --
FE Balance    xx --   xx  --  --
TRV. Level    xx --   xx  --  --
Analog FRSW   xx xx   xx  xx  xx
PLL Dac Gain  xx xx   xx  xx  xx


_
UP : Prev Data
CLEAR: Default Set    page. 2/2
```

On this screen, current servo adjusted data stored in the EEPROM are displayed. The adjusted data are initialized by pressing the [CLEAR] key, but be careful that they are not recoverable after initialization.
Before clearing the adjusted data, make a note of the set data. This screen will also appear if [0] All is selected in the Drive Auto Adjustment. In this case, default setting cannot be made.
For reference, the drive has been designed so that the gain center value is 20 and offset value is 80. Other values will be in a range of 10 to 80. If extreme value such as 00 or FF is set, adjustment will be faulty. In such a case, check for disc scratch or cable disconnection, then perform adjustment again.

6-6. MECHA AGING

```
      ### Mecha Aging ###



Press OPEN key




Abort: STOP key

```

On the Test Mode Menu screen, selecting 3 executes the aging of mechanism. First, open the tray and load a disc. Press the PLAY key, and the aging will start. When the tray is closed, the disc type and size are judged and displayed. During aging, the repeat cycle is displayed. Aging can be aborted at any time by pressing the STOP key. After the operation has stopped, unload the disc and press again the STOP key or the RETURN key to return to the Test Mode Menu.

6-7. EMERGENCY HISTORY

```
     ### MEG. History ###

Laser Hours     CD   xxxxxxxh
                DVD  xxxxxxxh

1. 00 00 00 00  00 00 00 00
   00 00 00 00  00 00 00 00

2. 00 00 00 00  00 00 00 00
   00 00 00 00  00 00 00 00

Select: 1 – 9   Scroll: UP/DOWN
(1: Last EMG.)  Exit: Return
```

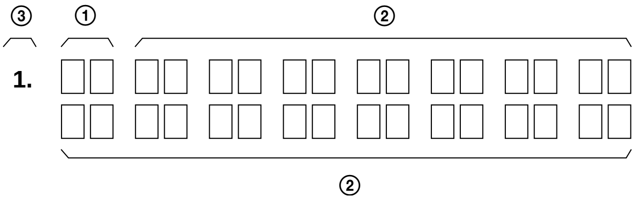
On the Test Mode Menu screen, selecting 4 displays the information such as servo emergency history. The history information from last 1 up to 10 can be scrolled with ↑ key or ↓ key. Also, specific information can be displayed by directly entering that number with ten keys.

The upper two lines display the laser ON total hours. Data below minutes are omitted.

Clearing History Information

Clearing laser hours
◎ Press DISPLAY and CLEAR keys in this order.
Both CD and DVD data are cleared.
Clearing emergency history
◎ Press TITLE and CLEAR keys in this order.
Initializing set up data
◎ Press DVD and CLEAR keys in this order.
The data have been initialized when “Set Up Initialized” message is displayed. The EMG. History screen will be restored soon.

How to see Emergency History



①: Emergency Code
②: Don't Care
These codes are used for verification of software designing.
③: Historical order 1 to 9

Emergency Codes List

10: Communication to IC202 (MB-101 board) failed.
11: Each servo for focus, tracking, and spindle is unlocked.
12: Communication to EEPROM, IC101 (MB-101 board) failed.
13: Writing of hours meter data to EEPROM, IC101 (MB-101 board) failed.
14: Communication to Servo DSP IC302 (MB-101 board) failed, or Servo DSP is faulty.
20: Initialization of tilt servo and sled servo failed. They are not placed in the initial position.
21: Tilt servo operation error
22: Syscon made a request to move the tilt servo to wrong position.
23: Sled servo operation error
24: Syscon made a request to move the sled servo to wrong position.
30: Tracking balance adjustment error
31: Tracking gain adjustment error
32: Focus balance adjustment error
33: Focus bias adjustment error
34: Focus gain adjustment error
35: Tilt servo adjustment error
36: RF equalizer adjustment error
37: RF group delay adjustment error
38: Jitter value after adaptive servo operation is too large.
40: Focus servo does not operate.
41: With a dual layer (DL) disc, focus jump failed.
50: CLV (spindle) servo does not operate.
51: Spindle does not stop.
60: With a DVD disc, Syscon made a request to seek nonexistent address.
61: With a CD disc, Syscon made a request to seek nonexistent address.
62: With a CD disc, Syscon made a request to seek nonexistent track No. and index No.
63: With a DVD disc, seeking of target address failed.
64: With a CD disc, seeking of target address failed.
65: With a CD disc, seeking of target index failed.
70: With a DVD disc, physical information data could not be read.
71: With a CD disc, TOC data could not be read.
80: Disc type judgment failed.
81: As disc type judgment failed, retry was repeated.
82: As disc type judgment failed, a measurement error occurred.
83: Disc type could not be judged within the specified time.
84: Illegal command code was received from Syscon.
85: Illegal command was received from Syscon.

6-8. VERSION INFORMATION

```
   ## Version Information ##

IF con.    Ver : x. xxx (xxxx)
           Group    00

SYScon.    Ver : x. xxx (xxxx)
           Model    xx
           Region   0x
Servo DSP.  Ver : 1. xxxx
OPT Type : x LASER

Exit: RETURN
_
```

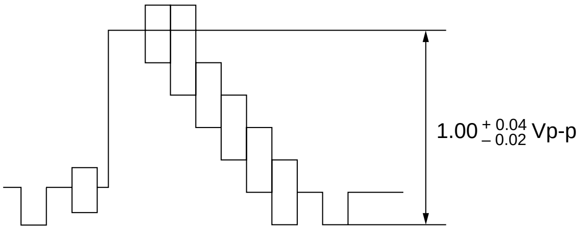
The ROM version, region code, OPT type, etc. are displayed if [5] is selected in the Test Mode Menu.
The parenthesized hexadecimal number in the version number field indicates the checksum value of the ROM.

Note : After down loading ROM data, sometimes it happens that checksum is not the same as that of ROM data which has been down loaded. In such a case, go back to the menu and select "0. Syscon Diagnosis", then select "1. All" in "2. Version". If the result of this operation does not give an agreement, it must be either Down Load error or ROM error.

6-9. VIDEO LEVEL ADJUSTMENT

On the Test Mode Menu screen, selecting [6] displays color bars for video level adjustment. During display of color bars, OSD disappears but the menu screen will be restored if pressing any key.

Measurement point	: LINE OUT VIDEO (75 Ω terminating resistance)
Measuring instrument	: Oscilloscope
Adjustment device	: RV501 on MB-101 board
Specified value	: $1.00^{+0.04}_{-0.02}$ Vp-p



6-10. IF CON SELF DIAGNOSTIC FUNCTION

1. FL-125 BOARD (IF CON) TEST MODE

The front board test mode is the IF CON self diagnostic mode. The IF CON can diagnose the functions of the front panel boards that the IF CON controls. Normally, the IF CON makes a serial communication with the SYSTEM CONTROL and operates following the commands from the SYSTEM CONTROL, but in the Test mode, the IF CON operates independently from the SYSTEM CONTROL.

In the Test mode, the following functions can be checked.
1. Button function
2. Remote commander receiving function
3. SYSTEM CONTROL-IF CON serial communication
4. Click shuttle function
5. Fluorescent display tube lighting check
   Grid check
   Anode check
6. LED control function

In the Test mode, the set operates same as usual, except voltage monitoring, communication monitoring, display of fluorescent display tube, and LED control.
1. The routine that monitors +3.3 V (P-CONT) of MB-101 board is not provided.
2. The monitoring timer for serial communication with the SYSTEM CONTROL is not provided. The set is not placed in the Standby mode, even if the communication with SYSTEM CONTROL is normal.
3. Display of fluorescent display tube (normally, display is made following the commands from SYSTEM CONTROL)
4. LED control (normally, control is made following the commands from SYSTEM CONTROL)

2. OPERATION OF SELF CHECK MODE

The Self Check mode is the function to conduct the basic test to the FL display and DVD panel section.

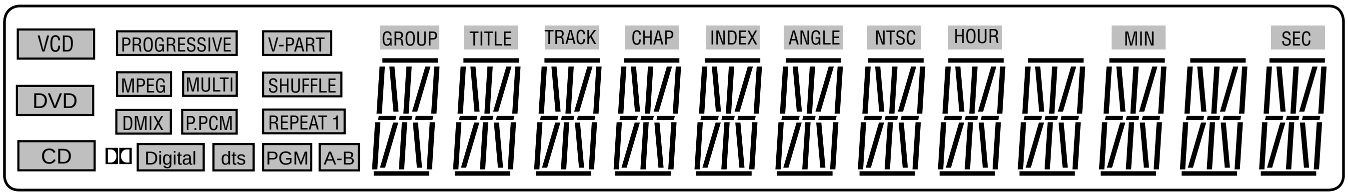
2-1. Self Check Mode Transition Processing

At the AC Power ON after IF CON (IC703) was reset, the input to 10pin (SELF CHECK) is judged and if "Low" is entered, the main unit transits to the Self Check mode. In this port input judgment, the result of 3-time attempts must be same (assuming that the MB-101 board is not connected). While pressing the [STOP] key on the main unit with the IF CON in STANDBY mode, enter [RETURN] → [DISPLAY] (or [SET UP]) on the remote commander, and the unit transits to the Self Check Mode. The Self Check mode terminates when the IF CON transits to the STANDBY mode.

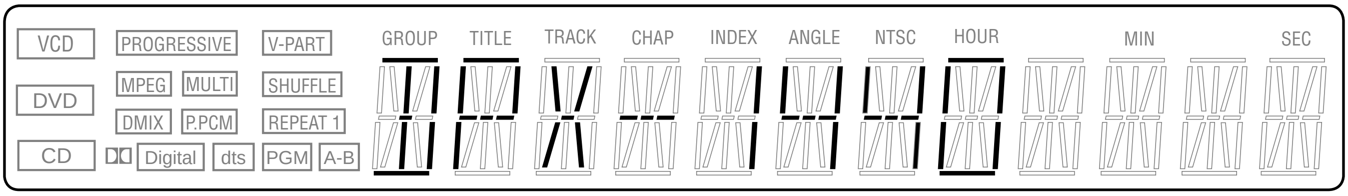
2-2. Operation of Auto Self Check

When the Self Check mode becomes active at the AC Power ON or by key input, the test display of the following steps (1) to (4) is repeated.

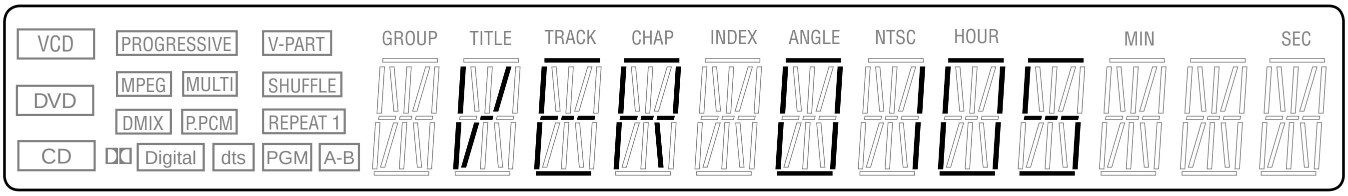
(1) FLD and LED all ON (for 5 seconds)



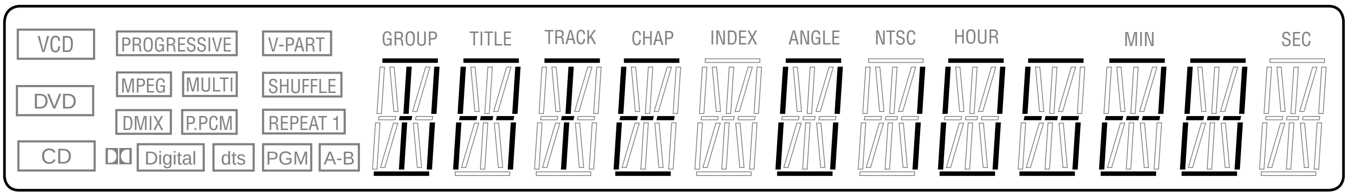
(2) MODEL display (for 2 seconds)



(3) Version display (for 2 seconds)



(4) ROM creation date display (for 2 seconds)



2-3. Each Self Check Function

Each Self Check function tests the FLD display, LED display, and key input.

Input Voltage [V]	IC703: Pin No. (Signal)				
	Pin ㉛ (AD1)	Pin ㉞ (AD4)	Pin ㉟ (AD5)	Pin ㊱ (AD6)	Pin ㊲ (CURSOR)
0	STOP	PLAY	OPEN/CLOSE	DISPLAY	ENTER
0.70	–	PAUSE	–	MENU	DOWN
1.31	–	PREVIOUS	–	RETURN	LEFT
1.97	–	NEXT	–	TOP MENU	UP
2.59	–	–	–	JOG	RIGHT
3.3	–	–	–	–	–

2-3-1. FLD and LED All ON

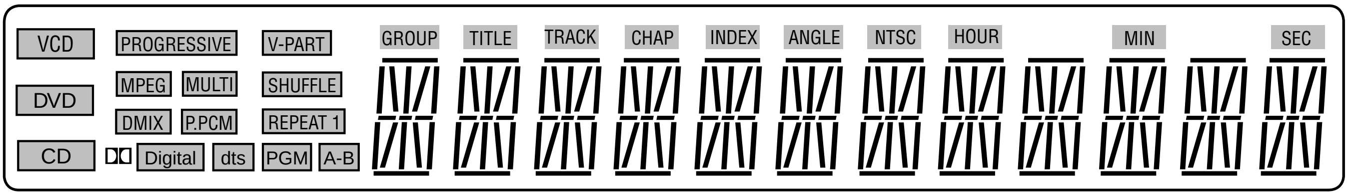
2-3-1-1. Transition Keys in Self Check Mode

- STOP key and OPEN/CLOSE key on the main unit
- LEFT key on the main unit and the remote commander

2-3-1-2. Operation and Display

In this mode, all LEDs except STANDBY LED and all segments of FLD turn ON.

Example of FLD all ON



2-3-2. Main Unit Key Name Display and Key Code Display

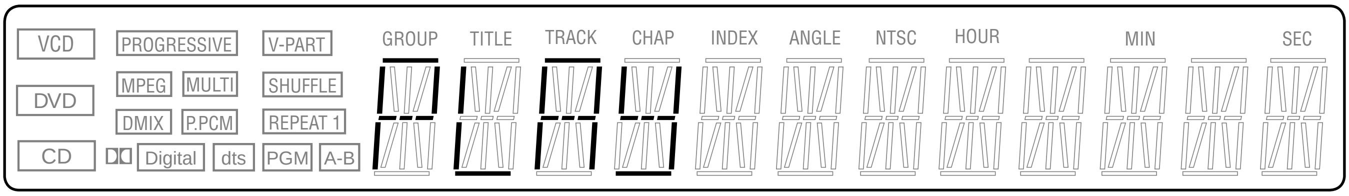
2-3-2-1. Transition Keys in Self Check Mode

- Keys on main unit except keys transited in self check

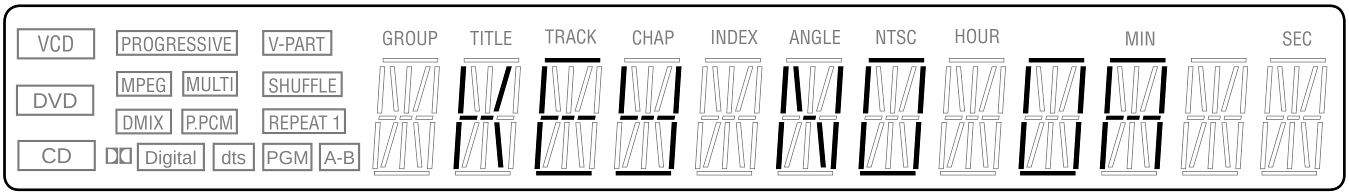
2-3-2-2. Operation and Display

When a key on the main unit is pressed in the Self Check mode, the name of that key is displayed on the FLD. Also, the key name display and the key code display can be switched with the DISPLAY key on the remote commander. "NOTHING" is displayed when nothing is entered. Also, VIDEO CD, DVD, and CD segments turn on when a communication error occurred.

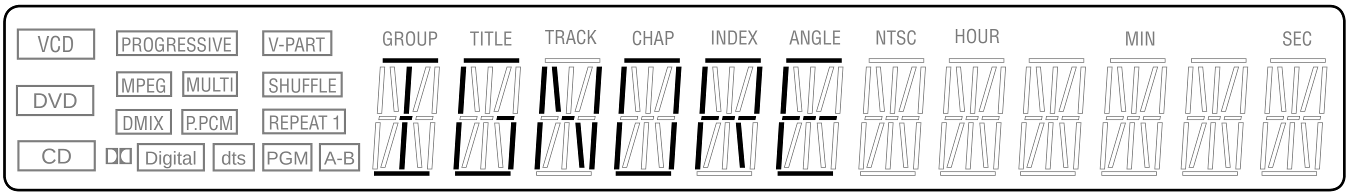
FLD display (at input of PLAY key on the main unit)



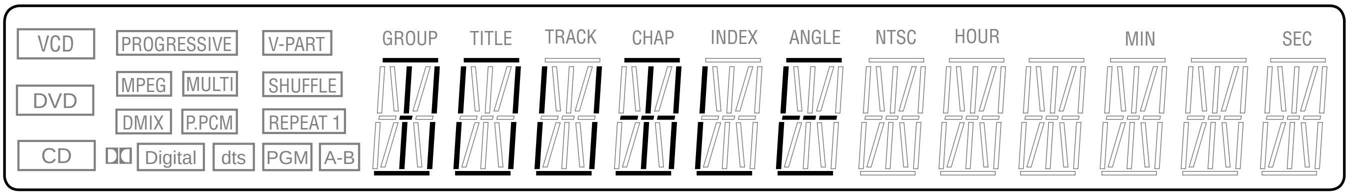
Key code display (at input of PLAY key, Key code: 0Ah)



At input of faulty voltage



When two keys are pressed



2-3-3. Remote Commander Key Name Display and Key Code Display

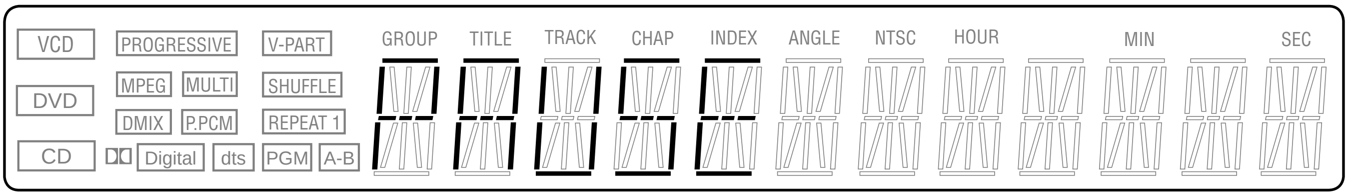
2-3-3-1. Transition Keys in Self Check Mode

- Remote commander keys except keys transited in self check

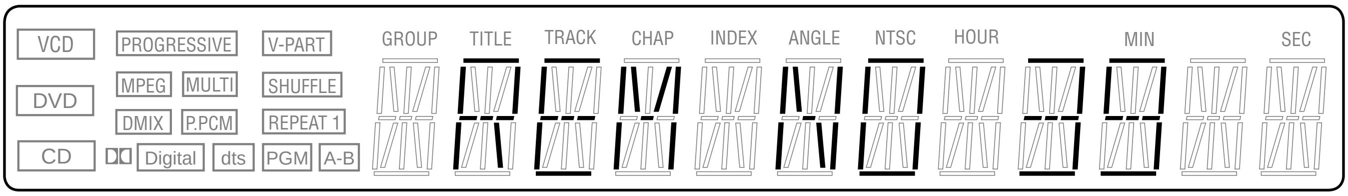
2-3-3-2. Operation and Display

When a key on the remote commander is pressed in the Self Check mode, the name of that key is displayed on the FLD. Also, the key name display and the key code display can be switched with the DISPLAY key on the remote commander. "NOTHING" is displayed when nothing is entered. Also, VIDEO CD, DVD, and CD segments turn on when a communication error occurred.

Remote commander key name display (at input of PAUSE key)



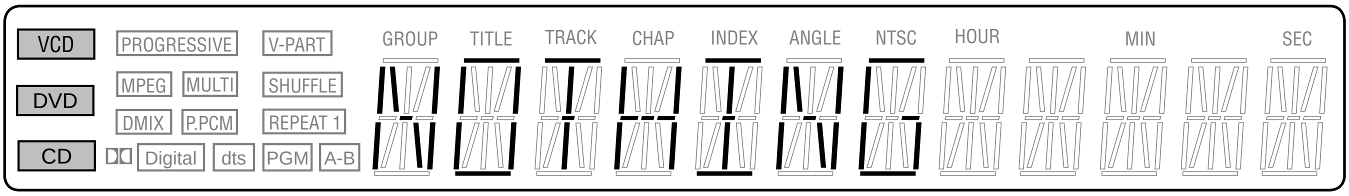
Remote commander key code display (at input of PAUSE key, Key code: 39h)



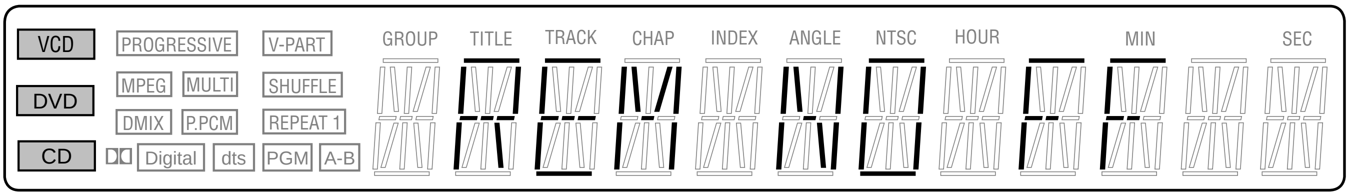
2-3-4. Communication Monitoring Display

The communication state is monitored and displayed while the key name on the main unit and the remote commander is displayed. When the communication to the System Controller failed, VIDEO CD, DVD, and CD segments turn on.

Communication error display (at no key input)



Communication error display (at code display without input of the remote commander)



2-3-5. FLD Anode Test Display and SHUTTLE Click Operation Test

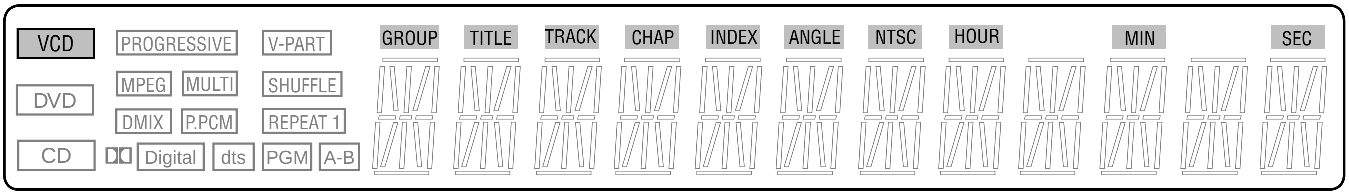
2-3-5-1. Transition Keys in Self Check Mode

- RIGHT on the main unit and the remote commander
- SHUTTLE on the remote commander during Anode Test display
  (This model does not provide JOG/SHUTTLE, and therefore use another DVD remote commander having the JOG/SHUTTLE)

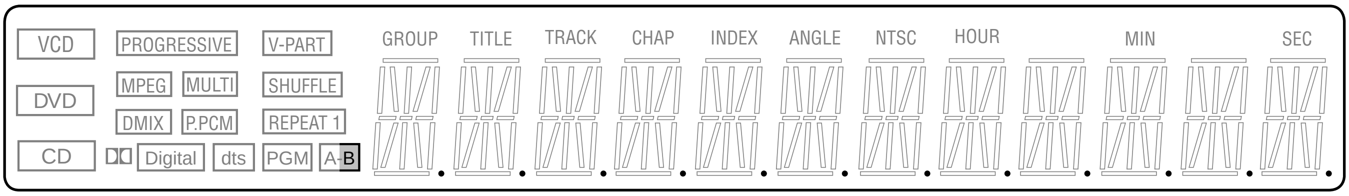
2-3-5-2. Operation and Display

The Self Check mode transits to this mode when RIGHT key is entered. Only the first segment of each grid of FLD turns on, and each time the SHUTTLE is entered, the segment of each grid is switched in order. When SHUTTLE input is clockwise, the segment switches in 1 → 2 → 3 direction, or counterclockwise it switches in 3 → 2 → 1 direction. This tests whether each segment turns on individually.

Display at the start of Anode Test



↓ (Input in CW direction)



2-3-6. FLD Grid Test Display and SHUTTLE Click Operation Test

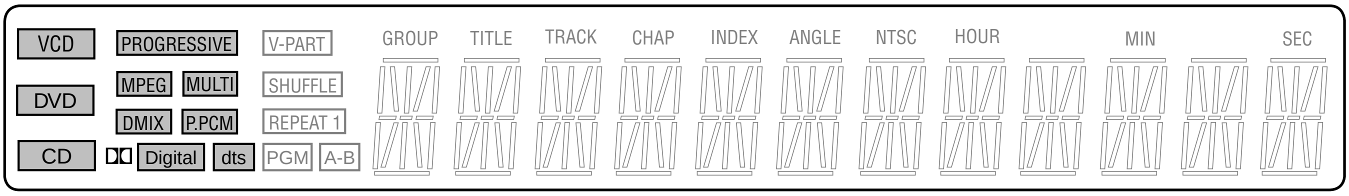
2-3-6-1. Transition Keys in Self Check Mode

- UP on the main unit and the remote commander
- SHUTTLE on the remote commander during Grid Test display (This model does not provide JOG/SHUTTLE, and therefore use another DVD remote commander having the JOG/ SHUTTLE)

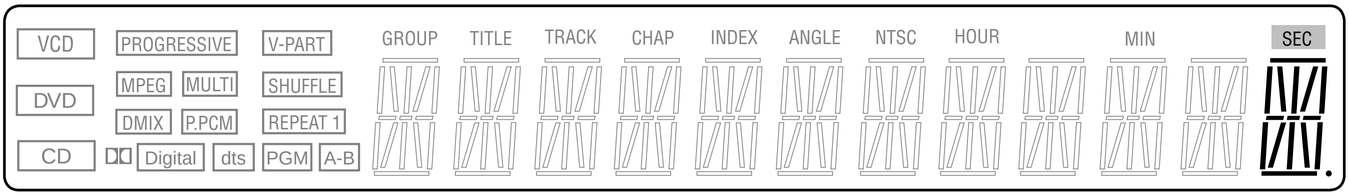
2-3-6-2. Operation and Display

The Self Check mode transits to this mode when UP key is entered. The first grid of FLD all turns on and other grids turn off. Each time the SHUTTLE is entered, the grid is switched in order. When SHUTTLE input is clockwise, the grid switches in 1 → 2 → 3 direction, or counterclockwise it switches in 3 → 2 → 1 direction. This tests whether each grid turns on individually.

Display at the start of Grid Test



↓ (Input in CW direction)



2-3-7. LED Test Display

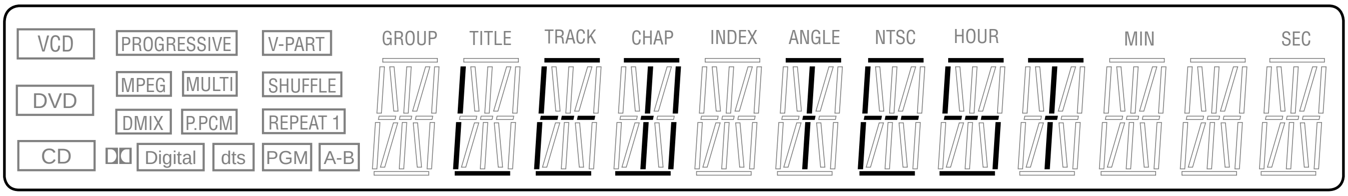
2-3-7-1. Transition Keys in Self Check Mode

- DOWN on the main unit and the remote commander
- SHUTTLE on the remote commander during LED Test display (This model does not provide JOG/SHUTTLE, and therefore use another DVD remote commander having the JOG/ SHUTTLE)

2-3-7-2. Operation and Display

LED is switched in order by the input of JOG/SHUTTLE. Also, LED ON/OFF is switched by the input of same key as the function that turns on the LED concerned.

FLD display during LED Test



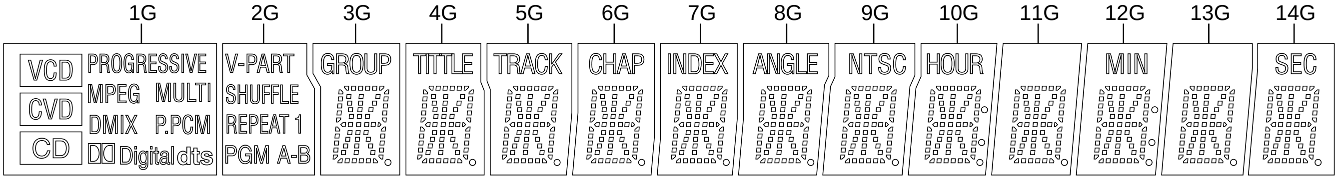
2-3-8. Beep Sound Test

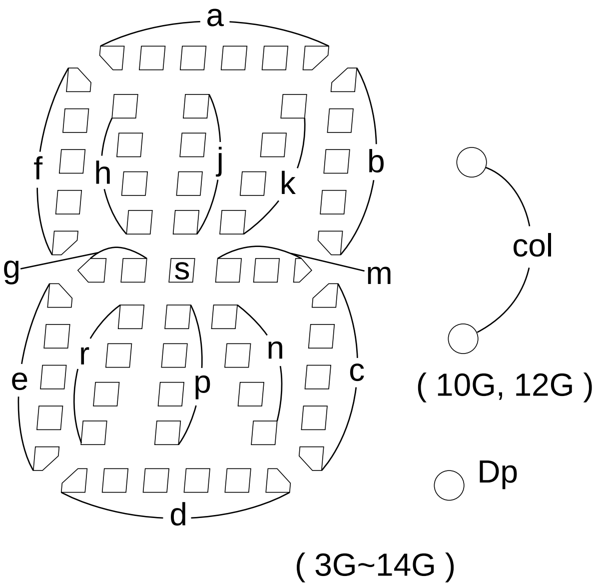
2-3-8-1. Transition Keys in Self Check Mode

- Input of a key on main unit

2-3-8-2. Operation and Display

In the Self Check mode, each time a key on the main unit is entered, a beep sound of 1kHz (100ms) is generated.





ANODE CONNECTION

	1G	2G	3G	4G	5G	6G	7G	8G	9G	10G	11G	12G	13G	14G
P1	VCD	-	GROUP	TITTLE	TRACK	CHAP	INDEX	ANGLE	NTSC	HOUR	-	MIN	-	SEC
P2	CVD	-	-	-	-	-	-	-	-	col	-	col	-	-
P3	CD	-	a	a	a	a	a	a	a	a	a	a	a	a
P4	PROGRESSIVE	-	h	h	h	h	h	h	h	h	h	h	h	h
P5	MPEG	-	j	j	j	j	j	j	j	j	j	j	j	j
P6	DMIX	-	k	k	k	k	k	k	k	k	k	k	k	k
P7	Digital	-	b	b	b	b	b	b	b	b	b	b	b	b
P8	-	V-PART	f	f	f	f	f	f	f	f	f	f	f	f
P9	MULTI	-	m	m	m	m	m	m	m	m	m	m	m	m
P10	P.	-	s	s	s	s	s	s	s	s	s	s	s	s
P11	PCM	-	g	g	g	g	g	g	g	g	g	g	g	g
P12	dts	-	c	c	c	c	c	c	c	c	c	c	c	c
P13	-	SHUFFLE	e	e	e	e	e	e	e	e	e	e	e	e
P14	-	REPEAT	r	r	r	r	r	r	r	r	r	r	r	r
P15	-	1	p	p	p	p	p	p	p	p	p	p	p	p
P16	-	PGM	n	n	n	n	n	n	n	n	n	n	n	n
P17	-	A-	d	d	d	d	d	d	d	d	d	d	d	d
P18	-	B	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp

6-11. TROUBLESHOOTING

6-11-1. Cannot Enter Test Mode

You cannot enter the Test mode when either button has been pressed by any reason with the board assembled in the front panel. In this state, the power does not turn on even under normal condition (the set is kept in standby state), and also no button is active and the remote commander is not accepted. In this case, disconnect the MB-101 board with the SELF CHECK (⑩ pin) of IF CON (IC404) on the FL-125 board kept in low state, supply AC, and the Test mode will be forcibly activated. Or, on the board, short the land printed as “SELF” to enter the Test mode. The IF CON (IC404) checks the SELF CHECK port only after the power on reset (only at AC supply, not in standby state). If any button is pressed, its name is displayed on the fluorescent display tube. But, if other than “NOTHING” is displayed though no button is pressed, it means that any button has been pressed.

6-11-2. Faults in Test Mode (MB-101 Board)

1. Test mode menu is not displayed

- Board visual check
  Check main IC’s, SYSTEM CONTROL (IC104), ROM (IC106 or IC107), AVD (IC502), and ARP&SERVO (IC302), for mounting condition, direction, or evidence of short between pins, or soldering failure. Also, compare with good board to check if there are missing capacitors or resistors.
- Clock signal check
  Measure the clock frequency at CPUCK (77 pin) of the SYSTEM CONTROL (IC104) using an oscilloscope.
  If 33 MHz is outputted, an access to the ROM is normal, and then check the items in 1-2.
  In the case of 8.25 MHz output, check the items in 1-1.
  If it is fixed to “H” or “L”, the X101 or SYSTEM CONTROL (IC104) will be faulty.

1-1. CPUCK (33 MHz) is not outputted

- Power supply voltage check
  Check the power connectors of the boards or power input pins of the IC’s for voltage. Check the IC’s in order of SYSTEM CONTROL (IC104), ROM (IC106 or 107), AVD (IC502), and ARP&SERVO (IC302). If correct voltage is not outputted, the power line will be shorted, or soldering or IC will be faulty.
- Reset signal check
  Check that the XFRRST (76 pin) of SYSTEM CONTROL (IC104) is “H” (3.3 V). If not “H”, a soldering failure of that line, a shot with other line, or faulty SYSTEM CONTROL (IC104) is doubtful.
- XRD, XWRH, and CS0X signals check
  Using an oscilloscope, measure the XRD (70 pin), XWRH (71 pin), and CS0X (58 pin) of the SYSTEM CONTROL (IC104) to check if they are fixed to “L” (0 V) or “H” (3.3 V), or if they are on the intermediate potential between “L” and “H”. If they are fixed to “L” or “H”, or on the intermediate potential, a soldering failure of that line, a shot with other line, or faulty SYSTEM CONTROL (IC104) is doubtful.
- HA [0 – 21] and HD [0 – 15] signals check
  Using an oscilloscope, measure the HA [0 – 21] (102 – 109, 111 – 118, 120, ① – ⑤ pins) and HD [0 – 15] (85 – 100 pins) of the SYSTEM CONTROL (IC104) to check if they are fixed to “L” (0 V) or “H” (3.3 V), or if HA is on the intermediate potential between “L” and “H” (HD is on intermediate potential in normal state), or if same waveform as that of adjacent pins is measured. In case of “L” or “H”, intermediate potential, or same waveform, a soldering failure of that line, a shot with other line, or faulty SYSTEM CONTROL (IC104) is doubtful.

1-2. CPUCK (33 MHz) is outputted (communication with ROM is normal)

- AVD (IC502) check
  Using an oscilloscope, measure the SDCLKO (149 pin) of the AVD (IC502) to check that 95 MHz is outputted. If not outputted, a short of 27 MHz line across CLKI (180 pin) and SCLKIN (182 pin), IC mounting failure, or faulty AVD (IC502) is doubtful. If 27 MHz is outputted, the communication between SYSTEM CONTROL (IC104) and AVD (IC502) is disabled, and therefore check the following items, particularly the AVD (IC502).
- WAIT signal check
  Using an oscilloscope, measure the XWAIT (67 pin) of the SYSTEM CONTROL (IC104) to check if it is fixed to “L” (0 V) or on the intermediate potential. In case of “L” or intermediate potential, examine CS2X – CS5X (60 – 63 pins) to check if any pin is fixed to “L”.
  For the CS2X and CS3X, AVD (IC502) mounting failure or faulty IC is doubtful.
  For the CS4X and CS5X, ARP&SERVO (IC302) mounting failure or faulty IC is doubtful.
  If CS2X – CS5X are not “L”, or they are sometimes on intermediate potential, a soldering failure of XWAIT line, a short with other line, or faulty SYSTEM CONTROL (IC104) is doubtful.
- INT signal check
  Using an oscilloscope, measure the INT0 – 2, 4 – 6 (⑯ – ⑱ pins, ⑳ – ㉒ pins) of the SYSTEM CONTROL (IC103) to check if INT0 – 2, and 6 are fixed to “L” (0 V) and INT5 is fixed to “H” (3.3 V), or they are on intermediate potential. In case of “L”, “H”, or intermediate potential, a soldering failure of IC’s connected to that line, a short with other line, faulty SYSTEM CONTROL (IC104), or faulty each IC is doubtful.
  INT0 : AVD (IC502)
  INT1, INT2 : ARP&SERVO (IC302)
  INT5, INT6 : AUDIO DSP (IC601)
- CSnX signals check
  Using an oscilloscope, measure the CX0X – CX7X (58 – 63, 65, 66 pins) of the SYSTEM CONTROL (IC104) to check if they are fixed to “L” (0 V), or two or more CS’s sometime go “L”, or on intermediate potential. In case of fixed “L”, two or more CS’s on “L” or intermediate potential, a soldering failure of IC’s connected to that line, a short with other line, faulty SYSTEM CONTROL (IC104), or faulty each IC is doubtful.
  CS0X : ROM (IC106 or IC107)
  CS2X, CS3X: AVD (IC502)
  CS4X, CS5X: ARP&SERVO (IC302)
- Other CS signals check
  Using an oscilloscope, measure the VESCS/X38CS (80 pin) and XDACS (79 pin) of the SYSTEM CONTROL (IC104) to check if they are fixed to “L”. If fixed, a soldering failure of that line, a short with other line, or faulty SYSTEM CONTROL (IC104) is doubtful.

If the above checking could not find a fault, check the outputted CS signal. If CS signal other than CS0X is outputted, a mounting failure of each IC or faulty IC that corresponds to active CS signal is doubtful.
CS2X, CS3X: AVD (IC502)
CS4X, CS5X: ARP&SERVO (IC302)

2. Test mode menu is displayed, but operation stops when a menu is selected

Using an oscilloscope, measure the PLCKO (95 pin) of the ARP& SERVO (IC302) to check if it is fixed to “L” (0 V) or “H” (3.3 V). If fixed to “L” or “H”, the ARP&SERVO (IC302) is faulty. If not fixed, check the items in 1-2. in order.

3. Specific item failed in Diag All Check
A mounting failure of IC or faulty IC for that item is doubtful.
If "1901NG" is displayed, a loose connection of CN601, mounting failure of AUDIO DSP (IC601), or faulty IC is doubtful.

4. Picture and sound are not outputted
Check the CN601 & 501 for connection, and the flat cable for damage or loose connection.

5. Picture is outputted, but sound is not outputted
A mounting failure of AUDIO DSP (IC601) or AUDIO DAC (IC603, IC604), power supply failure, or faulty IC is doubtful.

6. Sound is outputted, but picture is not outputted
Using an oscilloscope, measure the ⑥③, ⑥⑥, ⑥⑨, ⑦④, ⑦⑦, and ⑧⓪ pins of AVD (IC502) to check if analog signals are outputted respectively. If not outputted, a soldering failure of that line, a short with other line, missing capacitor or resistor, or faulty AVD is doubtful.

6-11-3. Drive Auto Adjustment stops by an error
Faulty analog circuits of ARP&SERVO (IC302) or faulty peripheral circuits of DIGITAL SERVO (IC202) on the MB-101 board, faulty optical pickup, or loose connection of flat cable is doubtful.

6-11-4. Power is Supplied but Unstable
If Syscon Diagnosis completed successfully, basically the boards other than MB-101 board, connection, optical pickup, or mechanical deck will be faulty.

1. Red LED does not light when AC is supplied
Check if the specified voltage is outputted from the EVER –11 V (③ pin), EVER +3.3 V (⑪ pin), and EVER +11 V (⑬ pin) of CN201 or CN920 in the power supply block. If not outputted, the power supply block will be faulty.

2. At [POWER] button ON, LED does not light in green even once, but kept in red (standby state)
Check if the specified voltage is outputted from the EVER –11 V (③ pin), EVER +3.3 V (⑪ pin), and EVER +11 V (⑬ pin) of CN201 or CN920 in the power supply block. If not outputted, the power supply block will be faulty.
Check the P-CONT (② pin) of CN401 on the IF-84 board if it becomes "H". If not "H", a soldering failure of that line, a short with other line, missing capacitor or resistor, faulty AVD (IC502), loose connection between power supply block and IF-87 board, loose connection of connectors, faulty power supply block, or faulty IF-87 board is doubtful.

3. At [POWER] button ON, LED lights in green but returns to red (standby state) after several seconds (e.g. it returns to standby state after "SONY DVD" was displayed)
There is no regularity between faulty parts and timing when the set returns to the standby state).
Check if the specified voltage is outputted from the power supply block. If not outputted, the power supply block will be faulty.
Check the XFRRST (⑦ pin) of CN101 on the MB-101 board if it is fixed to "L", or the XIBUSY (⑥ pin), XIFCS (⑤ pin), SI0 (④ pin), SO0 (③ pin) and SC0 (② pin) of CN101 if they are fixed to "L" or "H".
If fixed to "L" or "H", a soldering failure of that line, a short with other line, missing capacitor or resistor, or faulty AVD (IC502) is doubtful.
If not fixed to "L" or "H", loose connection between power supply block and IF-87 board or between IF-87 board and MB-101 board, loose connection of connectors, or faulty IF-87 board is doubtful.

4. At [POWER] button ON, LED lights in green but fluorescent display tube does not light
Loose connection between power supply block and IF-87 board, loose connection of connectors, or faulty IF-87 board is doubtful.

5. Picture and sound are not outputted
Loose connection between power supply block and IF-87 board or between IF-87 and VP-57/EV-14 board or between VP-57/EV-14 board and MB-101 board, loose connection of connectors, or faulty VP-57/EV-14 board is doubtful.

6. Picture is out outputted correctly
A mounting failure of BNR (IC601) on the MB-101 board, or faulty AVD (IC502) or ARP&SERVO (IC302), or faulty 27 MHz output (frequency, waveform) from 27-1OUT (③, ④ pin) of PLL (IC103) is doubtful.

6-11-5. Power is not Supplied
1. Red LED does not light when AC is supplied
The power (EVER +3.3 V) is not supplied to the IF CON (IC703) on the FL-125 board.
The X701 does not oscillate.

2. At [POWER] button ON, LED is kept in red (standby state)
Any button has been pressed.
The voltage at PONCHK (㉚ pin) of the IF CON (IC703) on the FL-125 board exceeds 0.5 V.

3. At [POWER] button ON, LED lights in green but returns to red (standby state) after several seconds
The PONCHK (㉚ pin) of the IF CON (IC703) on the FL-125 board is abnormal (slow rising from 0.5 V to more than 1.5 V, or voltage not rising to more than 1.5 V).
The SYSTEM CONTROL (IC104) on the MB-101 board is faulty.

SECTION 7
ELECTRICAL ADJUSTMENT

In making adjustment, refer to 7-3. Adjustment Related Parts Arrangement.

Note: During diagnostic check, the characters and color bars can be seen only with the NTSC monitor. Therefore, for diagnostic check, use the monitor that supports both NTSC and PAL modes.
Use the reference disc for PAL for check, and use the reference disc for NTSC for adjustment.

This section describes procedures and instructions necessary for adjusting electrical circuits in this set.

Instruments required:
1) Color monitor TV
2) Oscilloscope 1 or 2 phenomena, band width over 100 MHz, with delay mode
3) Frequency counter (over 8 digits)
4) Digital voltmeter
5) Standard commander (RMT-D139P/D140A/D140E/D140P)
6) DVD reference disc
   HLX-501 (J-6090-071-A) (dual layer) (NTSC)
   HLX-503 (J-6090-069-A) (single layer) (NTSC)
   HLX-504 (J-6090-088-A) (single layer) (NTSC)
   HLX-505 (J-6090-089-A) (dual layer) (NTSC)
   HLX-506 (J-6090-077-A) (single layer) (PAL)
   HLX-507 (J-6090-078-A)(dual layer) (PAL)
7) SACD reference disc
   HLXA-509 (J-6090-090-A)
8) Extention Cable (J-6090-109-A)

Abbreviation:
RUS : Russian

7-1. POWER SUPPLY CHECK

1. HS15S1E/HS15S1U Boards

Mode	E-E
Instrument	Digital voltmeter
EVER +3.3 V Check	
Test point	CN201 pin ⑪
Specification	3.5 ± 0.2 Vdc
SW +3.3 V Check	
Test point	CN201 pin ⑧
Specification	3.3 ± 0.2 Vdc
+5 V Check	
Test point	CN201 pin ⑫
Specification	5.0 ± 0.3 Vdc
SW +11 V Check	
Test point	CN201 pin ⑥, ⑦
Specification	$11.5^{+1.0}_{-1.5}$ Vdc
EVER +11 V Check	
Test point	CN201 pin ⑬
Specification	11.0 ± 1.0 Vdc
EVER –11 V Check	
Test point	CN201 pin ③
Specification	–11.0 ± 1.0 Vdc

Checking method:
1) Confirm that each voltage satisfies the specification.

7-2. ADJUSTMENT OF VIDEO SYSTEM

1. Video Level Adjustment (MB-101 BOARD)

<Purpose>

This adjustment is made to satisfy the NTSC/PAL standard, and if not adjusted correctly, the brightness will be too large or small.

Mode	Video level adjustment in test mode
Signal	Color bars
Test point	LINE OUT (VIDEO) connector (75 Ω terminated)
Instrument	Oscilloscope
Adjusting element	RV501
Specification	$1.00^{+0.04}_{-0.02}$ Vp-p

Adjusting method:

1) In the test mode initial menu “6” Video Level Adjustment, set so that color bars are generated.
2) Adjust the RV501 to attain $1.00^{+0.04}_{-0.02}$ Vp-p.

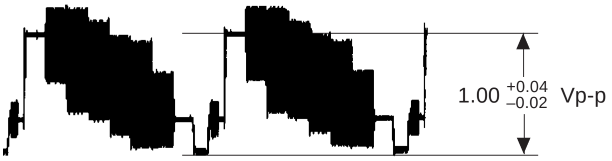


Figure 7-1

2. Checking S Video Output S-Y

<Purpose>

Check S-terminal video output. If it is incorrect, pictures will not be displayed correctly in spite of connection to the TV with a S-terminal cable.

Mode	Video level adjustment in test mode
Signal	Color bars
Test point	S VIDEO OUT (S-Y) connector (75 Ω terminated)
Instrument	Oscilloscope
Specification	1.00 ± 0.05 Vp-p

Checking method:

1) In the test mode initial menu “6” Video Level Adjustment, set so that color bars are generated.
2) Confirm that the S-Y level is 1.00 ± 0.05 Vp-p.

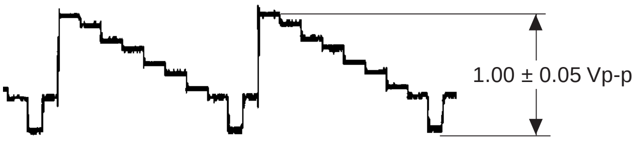


Figure 7-2

3. Checking S Video Output S-C

<Purpose>

This checks whether the S-C satisfies the NTSC/PAL Standard. If it is not correct, the colors will be too dark or light.

Mode	Video level adjustment in test mode
Signal	Color bars
Test point	S VIDEO OUT (S-C) connector (75 Ω terminated)
Instrument	Oscilloscope
Specification	A = 286 ± 30 mVp-p (NTSC) A = 300 ± 100 mVp-p (PAL)

Checking method:

1) In the test mode initial menu “6” Video Level Adjustment, set so that color bars are generated.
2) Confirm that the S-C burst is “A”.

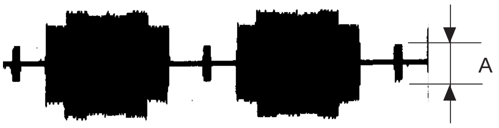


Figure 7-3

4. Checking Component Video Output Y (Except AEP, UK, RUS Model)

<Purpose>

This checks component video output Y. If it is incorrect, correct brightness will not be attained when connected to, for instance, projector.

Mode	Video level adjustment in test mode
Signal	Color bars
Test point	COMPONENT VIDEO OUT (Y) connector (75 Ω terminated)
Instrument	Oscilloscope
Specification	1.00 ± 0.05 Vp-p

Checking method:

1) In the test mode initial menu “6” Video Level Adjustment, set so that color bars are generated.
2) Confirm that the Y level is 1.00 ± 0.05 Vp-p.

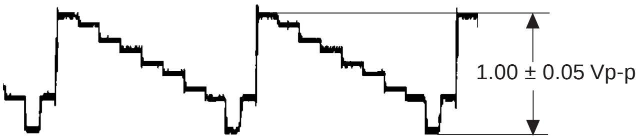


Figure 7-4

5. Checking Component Video Output B-Y (Except AEP, UK, RUS Model)

<Purpose>

This checks component video output B-Y. If it is incorrect, correct colors will not be displayed when connected to, for instance, projector.

Mode	Video level adjustment in test mode
Signal	Color bars
Test point	COMPONENT VIDEO OUT (P_B) connector (75 Ω terminated)
Instrument	Oscilloscope
Specification	700 ± 50 mVp-p

Checking method:

1) In the test mode initial menu "6" Video Level Adjustment, set so that color bars are generated.
2) Confirm that the B-Y level is 700 ± 50 mVp-p.

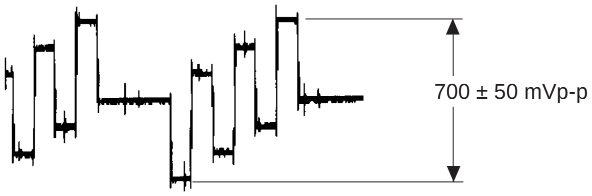


Figure 7-5

6. Checking Component Video Output R-Y (Except AEP, UK, RUS Model)

<Purpose>

This checks component video output R-Y. If it is incorrect, correct colors will not be displayed when connected to, for instance, projector.

Mode	Video level adjustment in test mode
Signal	Color bars
Test point	COMPONENT VIDEO OUT (P_R) connector (75 Ω terminated)
Instrument	Oscilloscope
Specification	700 ± 50 mVp-p

Checking method:

1) In the test mode initial menu "6" Video Level Adjustment, set so that color bars are generated.
2) Confirm that the R-Y level is 700 ± 50 mVp-p.

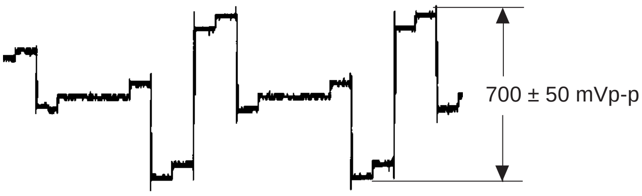


Figure 7-6

7. Checking RGB Output R (AEP, UK, RUS Model)

<Purpose>

This checks RGB output R. If it is incorrect, pictures will not be displayed correctly in spite of connection to the TV with an EURO AV connecting cord.

Mode	In test mode, Push [0] for Syscon Diagnosis and push [7] for Video and push [5] for RGB out
Signal	Color bars
Test point	LINE 1 (RGB)-TV connector pin ⑮ (75 Ω terminated)
Instrument	Oscilloscope
Specification	700 ± 50 mVp-p

Checking method:

1) Confirm that the R level is 700 ± 50 mVp-p.

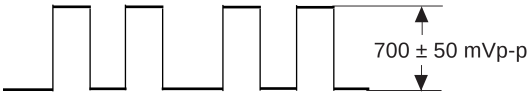


Figure 7-7

8. Checking RGB Output G (AEP, UK, RUS Model)

<Purpose>

This checks RGB output G. If it is incorrect, pictures will not be displayed correctly in spite of connection to the TV with an EURO AV connecting cord.

Mode	In test mode, Push [0] for Syscon Diagnosis and push [7] for Video and push [5] for RGB out
Signal	Color bars
Test point	LINE 1 (RGB)-TV connector pin ⑪ (75 Ω terminated)
Instrument	Oscilloscope
Specification	700 ± 50 mVp-p

Checking method:

1) Confirm that the G level is 700 ± 50 mVp-p.

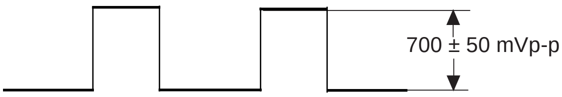


Figure 7-8

9. Checking RGB Output B (AEP, UK, RUS Model)

<Purpose>

This checks RGB output B. If it is incorrect, pictures will not be displayed correctly in spite of connection to the TV with an EURO AV connecting cord.

Mode	In test mode, Push [0] for Syscon Diagnosis and push [7] for Video and push [5] for RGB out
Signal	Color bars
Test point	LINE 1 (RGB)-TV connector pin ⑦ (75 Ω terminated)
Instrument	Oscilloscope
Specification	700 ± 50 mVp-p

Checking method:

1) Confirm that the B level is 700 ± 50 mVp-p.

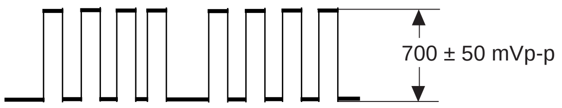
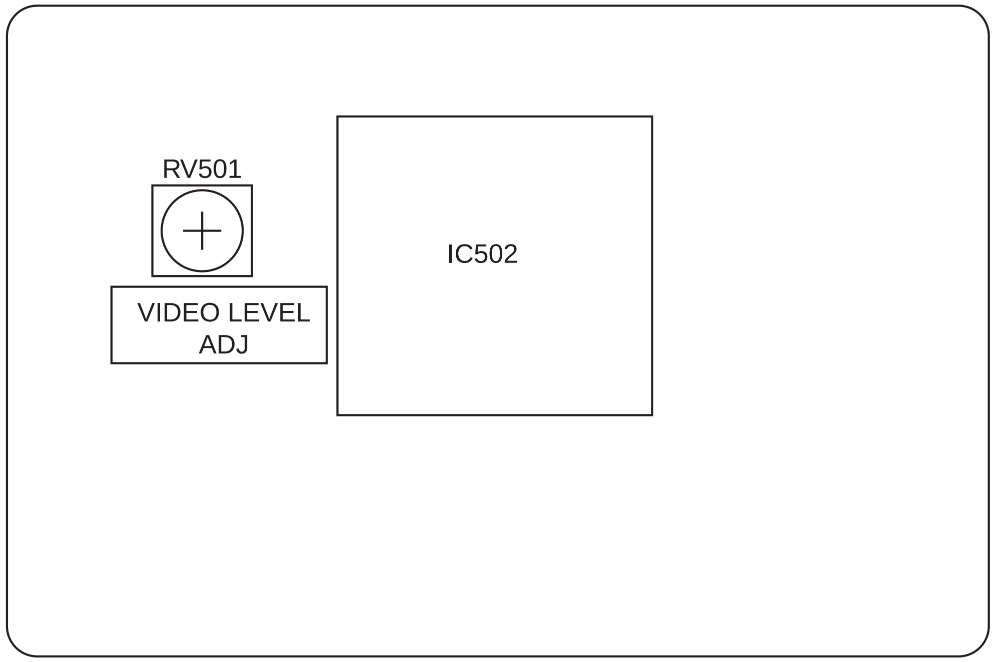


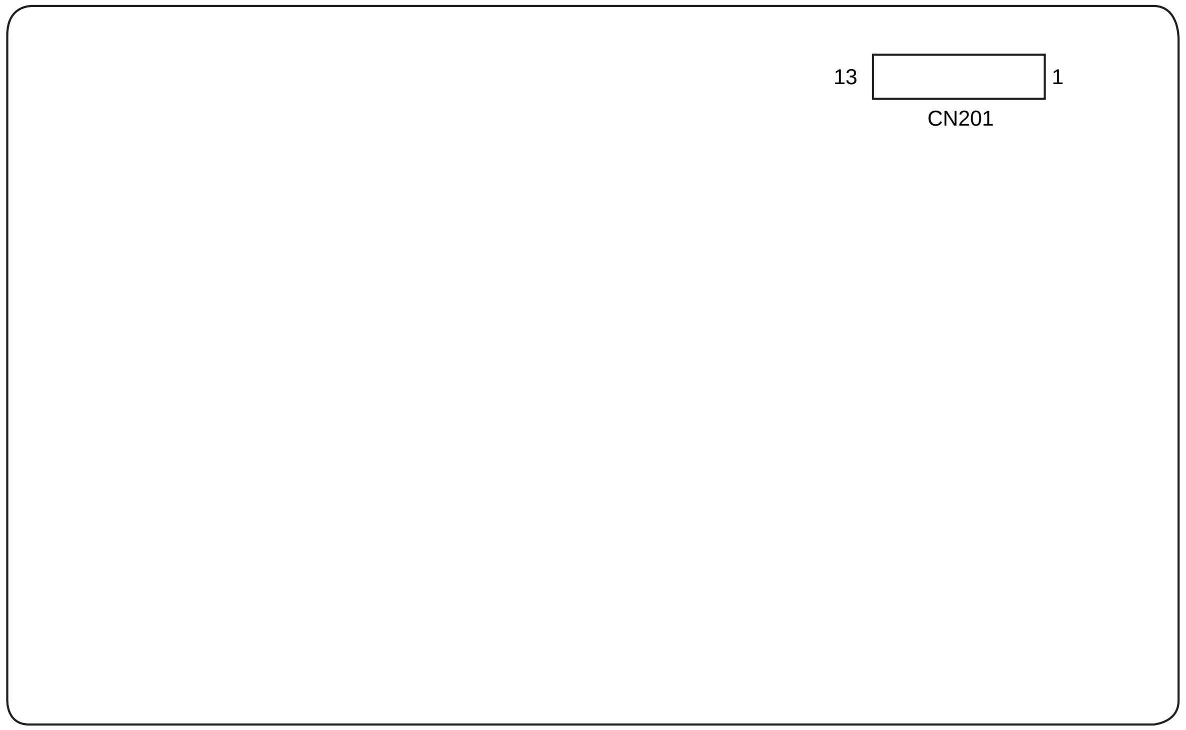
Figure 7-9

7-3. ADJUSTMENT RELATED PARTS ARRANGEMENT

MB-101 BOARD (SIDE A)



HS15S1E/HS15S1U BOARDS (SIDE A)



SECTION 8
REPAIR PARTS LIST

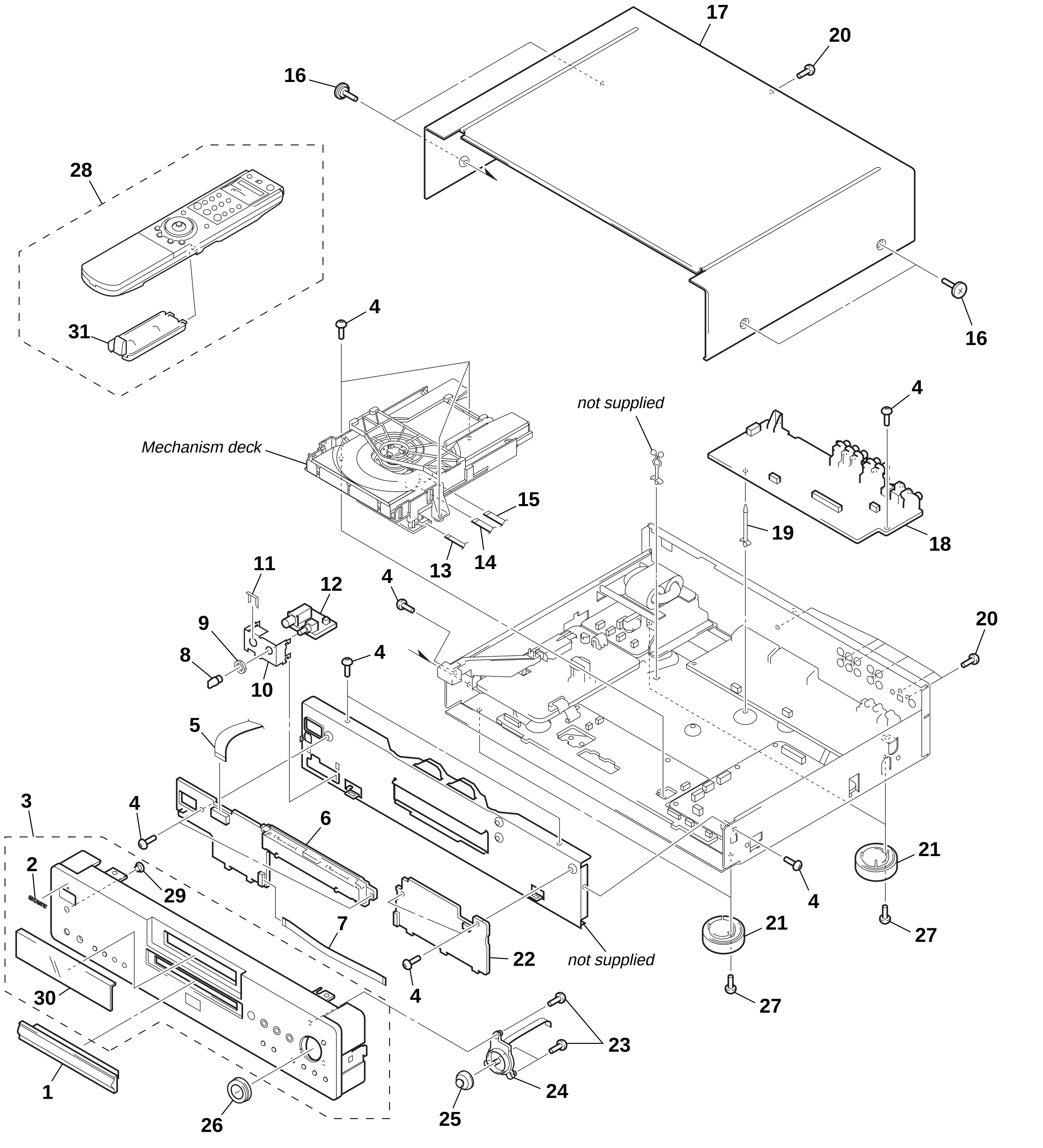
8-1. EXPLODED VIEWS

NOTE:
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ Parts Color ↑ Cabinet's Color
- The mechanical parts with no reference number in the exploded views are not supplied.
- Accessories and packing materials are given in the last of the electrical parts list.
- Abbreviation
  CND : Canadian
  HK : Hong Kong
  KR : Korea
  MX : Mexican
  RUS : Russian

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

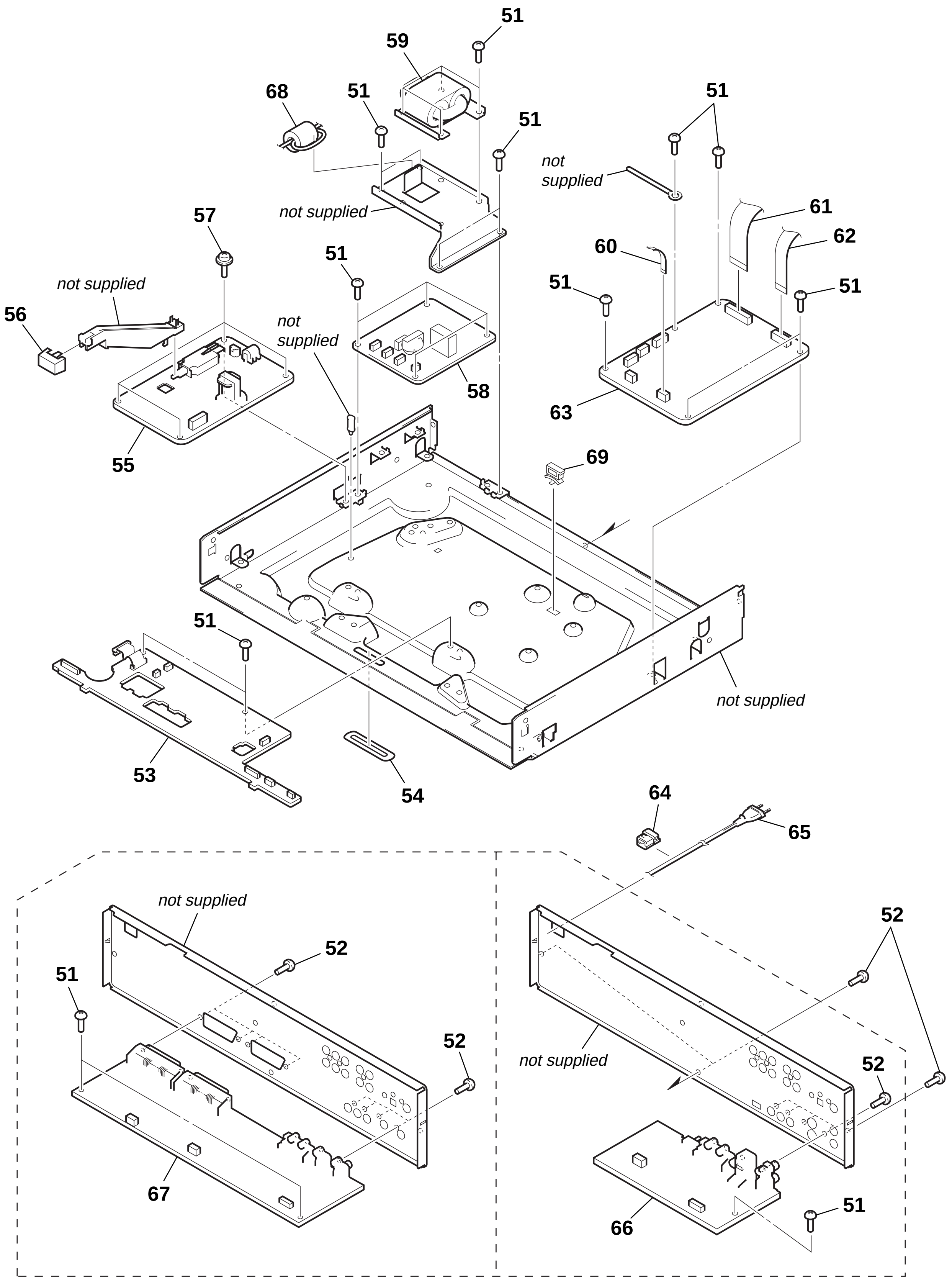
Les composants identifiés par une marque ⚠ sont critiquens pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

8-1-1. MAIN ASSEMBLY



Ref. No.	Part No.	Description	Remark
1	X-3951-947-1	PANEL ASSY, TRAY (BLACK: US, CND)	
1	X-3951-948-1	PANEL ASSY, TRAY (SILVER: AEP, UK, RUS)	
1	X-3951-949-1	PANEL ASSY, TRAY (BLACK: AEP, UK)	
1	X-3951-950-1	PANEL ASSY, TRAY (GOLD)	
2	4-942-568-41	EMBLEM (NO.5), SONY (for BLACK)	
2	4-942-568-51	EMBLEM (NO.5), SONY (for GOLD)	
2	4-942-568-61	EMBLEM (NO.5), SONY (for SILVER)	
3	X-3951-938-1	FRONT PANEL ASSY (BLACK: US, CND)	
3	X-3951-939-1	FRONT PANEL ASSY (SILVER: AEP, UK, RUS)	
3	X-3951-940-1	FRONT PANEL ASSY (GOLD)	
3	X-3951-941-1	FRONT PANEL ASSY (BLACK: AEP, UK)	
4	3-970-608-11	SUMITITE (B3), +BV	
5	1-823-265-11	CABLE, FLEXIBLE FLAT (FLI-001)	(US, CND, MX, HK, KR)
5	1-823-265-21	CABLE, FLEXIBLE FLAT (FLI-002)	(AEP, UK, RUS)
* 6	A-6065-766-A	FL-125 BOARD, COMPLETE (US, CND, MX)	
* 6	A-6065-772-A	FL-125 BOARD, COMPLETE (HK, KR)	
* 6	A-6065-781-A	FL-125 BOARD, COMPLETE (AEP, UK, RUS)	
7	1-823-266-11	CABLE, FLEXIBLE FLAT (FLR-002)	(US, CND, MX, HK, KR)
7	1-823-266-21	CABLE, FLEXIBLE FLAT (FLR-003)	(AEP, UK, RUS)
8	3-059-379-32	KNOB, VOLUME (BLACK)	
8	3-059-379-41	KNOB, VOLUME (SILVER)	
8	3-059-379-61	KNOB, VOLUME (GOLD)	
9	2-118-268-01	NUT (M9), HEXAGON	
10	3-070-867-01	PLATE (HP)	
* 11	3-684-436-01	PLATE, MOUNT	
* 12	A-6065-763-A	HP-134 BOARD, COMPLETE	(US, CND, MX, HK, KR)
* 12	A-6065-778-A	HP-134 BOARD, COMPLETE (AEP, UK, RUS)	
13	1-757-697-11	CABLE, FLEXIBLE FLAT (FMM-035)	
14	1-757-694-11	CABLE, FLEXIBLE FLAT (FMO-002)	
15	1-757-693-11	CABLE, FLEXIBLE FLAT (FMO-001)	
16	3-070-883-01	SCREW, TAPPING (for BLACK)	
16	3-070-883-11	SCREW, TAPPING (for SILVER, GOLD)	
17	3-070-865-01	CASE, TOP (BLACK)	
17	3-070-865-21	CASE, TOP (SILVER)	
17	3-070-865-41	CASE, TOP (GOLD)	
* 18	A-6065-762-A	AU-230 BOARD, COMPLETE (US, CND, MX)	
* 18	A-6065-775-A	AU-230 BOARD, COMPLETE (HK, KR)	
* 18	A-6065-777-A	AU-230 BOARD, COMPLETE (AEP, UK, RUS)	
19	4-924-098-81	HOLDER, PC BOARD	
20	3-970-608-51	SUMITITE (B3), +BV	
21	X-4953-882-1	FOOT ASSY (AEP, UK, RUS)	
21	X-4953-883-1	FOOT ASSY (US, CND)	
21	X-4953-884-1	FOOT ASSY (MX, HK, KR)	
* 22	A-6065-767-A	FR-182 BOARD, COMPLETE	(US, CND, MX, HK, KR)
* 22	A-6065-782-A	FR-182 BOARD, COMPLETE (AEP, UK, RUS)	
23	4-951-620-01	SCREW (2.6X8), +BVTP	
24	1-476-273-11	ENCODER, ROTARY	
25	X-3951-951-1	KNOB ASSY, CURSOR (BLACK)	
25	X-3951-952-1	KNOB ASSY, CURSOR (SILVER)	
25	X-3951-953-1	KNOB ASSY, CURSOR (GOLD)	
26	3-070-877-01	RING, SHUTTLE (BLACK)	
26	3-070-877-11	RING, SHUTTLE (SILVER)	
26	3-070-877-21	RING, SHUTTLE (GOLD)	
27	7-685-885-09	SCREW +BVTT 4X16 (S)	
28	1-476-926-11	REMOTE COMMANDER (RMT-D140A)	(US, CND, MX, KR)
28	1-476-926-31	REMOTE COMMANDER (RMT-D140P)	(BLACK: AEP, UK)
28	1-476-926-41	REMOTE COMMANDER (RMT-D140E) (HK)	
28	1-476-926-51	REMOTE COMMANDER (RMT-D139P)	(SILVER: AEP, UK, RUS)
29	3-070-880-11	WINDOW, IR	
30	3-070-876-11	WINDOW, FL	
31	3-071-119-01	COVER, BATTERY	(for RMT-D139P/D140A/D140E/D140P)

8-1-2. CHASSIS ASSEMBLY



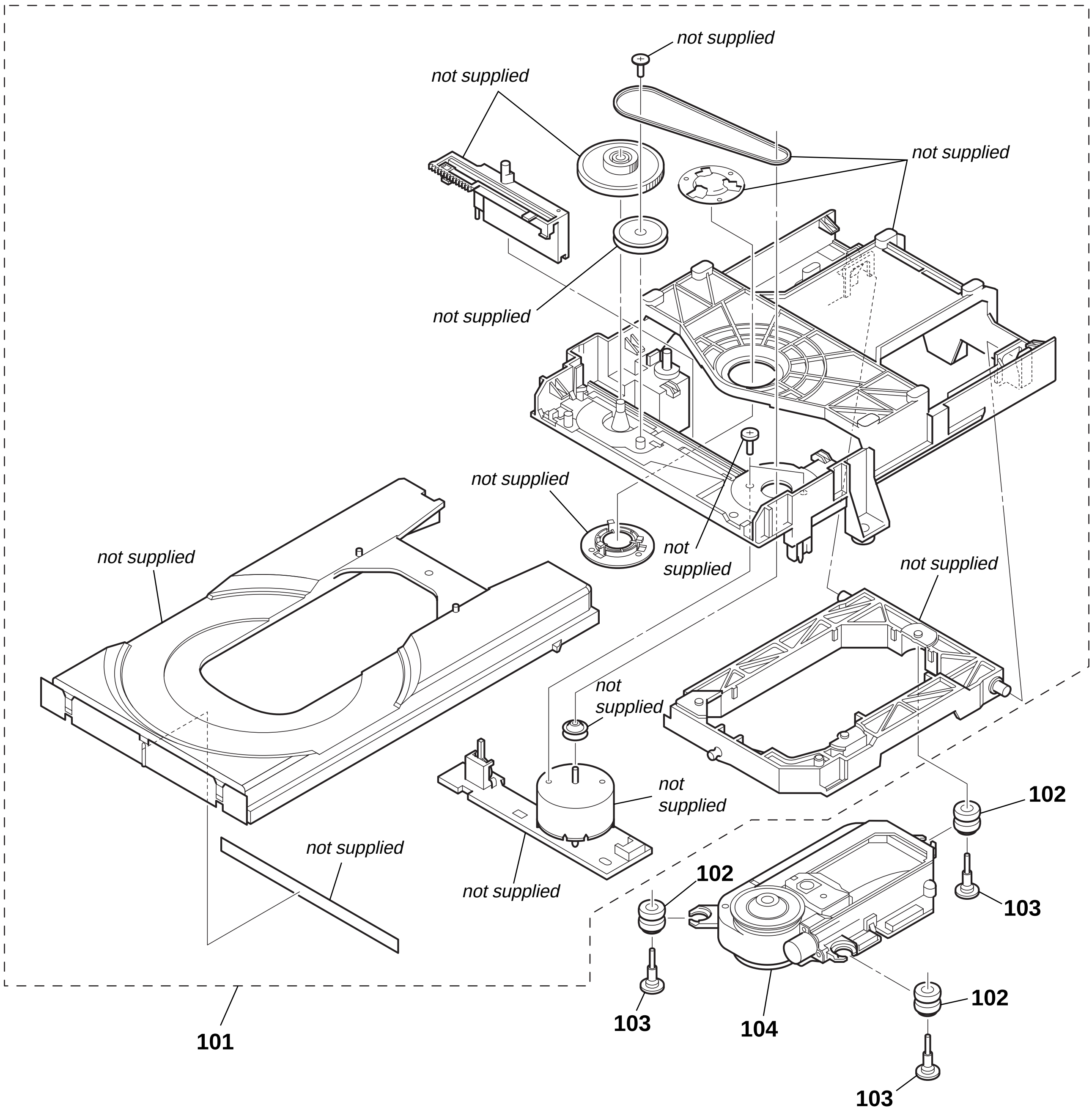
AEP, UK, RUS

US, CND, MX, HK, KR

Ref. No.	Part No.	Description	Remark
51	3-970-608-11	SUMITITE (B3), +BV	
52	3-970-608-51	SUMITITE (B3), +BV	
* 53	A-6065-764-A	IF-87 BOARD, COMPLETE (US, CND, MX, HK, KR)	
* 53	A-6065-779-A	IF-87 BOARD, COMPLETE (AEP,UK, RUS)	
54	3-069-090-01	COVER, EJECT	
* 55	1-468-619-11	POWER BLOCK (HS15S1U) (US, CND, MX)	
* 55	1-468-620-11	POWER BLOCK (HS15S1E) (AEP, UK, RUS, HK, KR)	
56	3-070-888-01	BUTTON, POWER (BLACK)	
56	3-070-888-11	BUTTON, POWER (SILVER)	
56	3-070-888-21	BUTTON, POWER (GOLD)	
57	3-050-569-01	SUMITITE (B3), +WHD	
* 58	A-6065-765-A	RY-13 BOARD, COMPLETE (US, CND, MX, HK, KR)	
* 58	A-6065-780-A	RY-13 BOARD, COMPLETE (AEP, UK, RUS)	
⚠59	1-437-496-11	TRANSFORMER, POWER (US, CND, MX)	
⚠59	1-437-497-11	TRANSFORMER, POWER (AEP, UK, RUS, HK, KR)	
60	1-823-267-11	CABLE, FLEXIBLE FLAT (FIM-001) (US, CND, MX, HK, KR)	
60	1-823-267-21	CABLE, FLEXIBLE FLAT (FIM-002) (AEP, UK, RUS)	
61	1-823-270-11	CABLE, FLEXIBLE FLAT (FMA-003) (US, CND, MX, HK, KR)	
61	1-823-270-21	CABLE, FLEXIBLE FLAT (FMA-004) (AEP, UK, RUS)	
62	1-823-271-11	CABLE, FLEXIBLE FLAT (FMV-001) (US, CND, MX, HK, KR)	
62	1-823-272-21	CABLE, FLEXIBLE FLAT (FME-002) (AEP, UK, RUS)	
* 63	A-6065-761-A	MB-101 BOARD, COMPLETE (US, CND)	
* 63	A-6065-774-A	MB-101 BOARD, COMPLETE (HK, KR)	
* 63	A-6065-776-A	MB-101 BOARD, COMPLETE (AEP, UK)	
* 63	A-6065-784-A	MB-101 BOARD, COMPLETE (RUS)	
* 63	A-6065-786-A	MB-101 BOARD, COMPLETE (MX)	
64	4-966-267-12	BUSHING (FBS001), CORD	
⚠65	1-769-744-91	CORD, POWER (UK, HK)	
⚠65	1-757-140-11	CORD, POWER (AEP, RUS)	
⚠65	1-783-531-31	CORD, POWER (US, CND, MX)	
⚠65	1-823-296-11	CORD, POWER (KR)	
* 66	A-6065-768-A	VP-57 BOARD, COMPLETE (US, CND, MX, HK, KR)	
* 67	A-6065-783-A	EV-14 BOARD, COMPLETE (AEP, UK, RUS)	
68	1-500-386-11	FILTER, CLAMP (FERRITE CORE) (US, CND, MX)	
69	4-215-927-01	CLAMP	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

8-1-3. MECHANISM DECK ASSEMBLY



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
101	A-6062-659-A	LOADING ASSY (HIGH)	
102	3-053-847-11	INSULATOR	
103	3-067-344-01	INSULATOR SCREW	
⚠104	8-820-144-06	OPTICAL PICK-UP KHM-240AAA/J1RP	

8-2. ELECTRICAL PARTS LIST

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL: Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F: nonflammable
- Not all of the parts for POWER BLOCK (HS15S1E, HS15S1U) are listed.
- Items marked "*" are not stocked since they are seldom required for routine service.
  Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: μ, for example:
  uA. . : μA. . uPA. . : μPA. .
  uPB. . : μPB. . uPC. . : μPC. .
  uPD. . : μPD. .
- CAPACITORS
  uF: μF
- COILS
  uH: μH
- Abbreviation
  CND : Canadian
  HK : Hong Kong
  KR : Korea
  MX : Mexican
  RUS : Russian

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiquens pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
*	A-6065-762-A	AU-230 BOARD, COMPLETE (US, CND, MX)			
*	A-6065-775-A	AU-230 BOARD, COMPLETE (HK, KR)			
*	A-6065-777-A	AU-230 BOARD, COMPLETE (AEP, UK, RUS)			
		************************			
		(Ref.No. 1,000 Series)			
*	3-309-144-21	HEAT SINK			
	7-685-871-01	SCREW +BVTT 3X6 (S)			
		< CAPACITOR >			
C101	1-130-478-00	MYLAR	0.0039uF	5%	50V
C102	1-130-478-00	MYLAR	0.0039uF	5%	50V
C103	1-130-478-00	MYLAR	0.0039uF	5%	50V
C104	1-130-478-00	MYLAR	0.0039uF	5%	50V
C105	1-130-478-00	MYLAR	0.0039uF	5%	50V
C106	1-130-467-00	MYLAR	470PF	5%	50V
C107	1-130-467-00	MYLAR	470PF	5%	50V
C108	1-130-472-00	MYLAR	0.0012uF	5%	50V
C109	1-136-818-11	FILM	0.0047uF	5%	100V
C110	1-136-818-11	FILM	0.0047uF	5%	100V
C111	1-106-363-00	MYLAR	6800PF	5%	50V
C112	1-130-467-00	MYLAR	470PF	5%	50V
C113	1-130-467-00	MYLAR	470PF	5%	50V
C114	1-130-467-00	MYLAR	470PF	5%	50V
C115	1-136-818-11	FILM	0.0047uF	5%	100V
C116	1-136-818-11	FILM	0.0047uF	5%	100V
C117	1-136-818-11	FILM	0.0047uF	5%	100V
C118	1-130-467-00	MYLAR	470PF	5%	50V
C119	1-130-467-00	MYLAR	470PF	5%	50V
C120	1-130-472-00	MYLAR	0.0012uF	5%	50V
C121	1-130-467-00	MYLAR	470PF	5%	50V
C122	1-130-467-00	MYLAR	470PF	5%	50V
C123	1-130-467-00	MYLAR	470PF	5%	50V
C124	1-136-850-11	MYLAR	0.1uF	5%	63V
C125	1-115-197-11	ELECT	100uF	20%	25V
C126	1-115-197-11	ELECT	100uF	20%	25V
C127	1-136-850-11	MYLAR	0.1uF	5%	63V
C128	1-115-197-11	ELECT	100uF	20%	25V
C129	1-115-197-11	ELECT	100uF	20%	25V
C130	1-115-197-11	ELECT	100uF	20%	25V
C131	1-115-197-11	ELECT	100uF	20%	25V
C132	1-136-850-11	MYLAR	0.1uF	5%	63V
C133	1-136-850-11	MYLAR	0.1uF	5%	63V
C134	1-136-850-11	MYLAR	0.1uF	5%	63V
C135	1-136-850-11	MYLAR	0.1uF	5%	63V
C136	1-136-850-11	MYLAR	0.1uF	5%	63V
C137	1-136-850-11	MYLAR	0.1uF	5%	63V
C138	1-136-850-11	MYLAR	0.1uF	5%	63V
C145	1-163-259-91	CERAMIC CHIP	220PF	5%	50V
C146	1-163-259-91	CERAMIC CHIP	220PF	5%	50V
C147	1-163-259-91	CERAMIC CHIP	220PF	5%	50V
C148	1-163-259-91	CERAMIC CHIP	220PF	5%	50V
C149	1-163-259-91	CERAMIC CHIP	220PF	5%	50V
C150	1-163-259-91	CERAMIC CHIP	220PF	5%	50V
C201	1-130-478-00	MYLAR	0.0039uF	5%	50V
C202	1-130-478-00	MYLAR	0.0039uF	5%	50V
C203	1-136-818-11	FILM	0.0047uF	5%	100V
C204	1-136-818-11	FILM	0.0047uF	5%	100V
C205	1-130-467-00	MYLAR	470PF	5%	50V
C206	1-130-467-00	MYLAR	470PF	5%	50V
C207	1-130-467-00	MYLAR	470PF	5%	50V
C208	1-130-467-00	MYLAR	470PF	5%	50V
C209	1-136-850-11	MYLAR	0.1uF	5%	63V
C210	1-136-850-11	MYLAR	0.1uF	5%	63V
C211	1-136-850-11	MYLAR	0.1uF	5%	63V
C212	1-115-197-11	ELECT	100uF	20%	25V
C213	1-136-850-11	MYLAR	0.1uF	5%	63V
C214	1-115-197-11	ELECT	100uF	20%	25V
C215	1-163-259-91	CERAMIC CHIP	220PF	5%	50V
C218	1-163-259-91	CERAMIC CHIP	220PF	5%	50V

Ref. No.	Part No.	Description				Remark
C251	1-127-718-91	ELECT MELF	100uF	20%	16V	
C252	1-127-718-91	ELECT MELF	100uF	20%	16V	
C255	1-127-719-91	ELECT MELF	220uF	20%	16V	
C256	1-127-719-91	ELECT MELF	220uF	20%	16V	
C257	1-128-850-91	ELECT	47uF	20%	35V	
C301	1-136-850-11	MYLAR	0.1uF	5%	63V	
C302	1-119-814-21	ELECT	1000uF	20%	35V	
C303	1-119-814-21	ELECT	1000uF	20%	35V	
C304	1-119-814-21	ELECT	1000uF	20%	35V	
C305	1-119-814-21	ELECT	1000uF	20%	35V	
C306	1-128-200-11	ELECT	47uF	20%	63V	
C307	1-163-009-91	CERAMIC CHIP	0.001uF	10%	50V	
C308	1-136-850-11	MYLAR	0.1uF	5%	63V	
C309	1-128-200-11	ELECT	47uF	20%	63V	
C310	1-136-850-11	MYLAR	0.1uF	5%	63V	
C311	1-136-850-11	MYLAR	0.1uF	5%	63V	
C312	1-119-799-11	ELECT	47uF	20%	25V	
C313	1-136-850-11	MYLAR	0.1uF	5%	63V	
C351	1-125-890-11	ELECT	1000uF	20%	6.3V	
C352	1-136-850-11	MYLAR	0.1uF	5%	63V	
C355	1-119-825-11	ELECT	22uF	20%	25V	
C356	1-119-780-11	ELECT	330uF	20%	10V	
C357	1-128-840-11	ELECT	47uF	20%	16V	
C359	1-119-820-11	ELECT	1uF	20%	50V	
C360	1-119-820-11	ELECT	1uF	20%	50V	
C361	1-127-721-91	ELECT MELF	1000PF	20%	16V	
C362	1-119-820-11	ELECT	1uF	20%	50V	
C363	1-163-009-91	CERAMIC CHIP	0.001uF	10%	50V	(US, CND, MX)
		< CONNECTOR >				
CN101	1-815-880-11	CONNECTOR, FPC/FFC 27P				
CN201	1-506-469-11	PIN, CONNECTOR 4P (AEP, UK, RUS)				
* CN251	1-564-001-11	PIN, CONNECTOR 2P				
* CN301	1-564-241-11	PIN, CONNECTOR (B4P-VH) 4P				
CN351	1-506-469-11	PIN, CONNECTOR 4P				
		< DIODE >				
D251	8-719-988-61	DIODE 1SS355TE-17				
D301	8-719-210-21	DIODE 11EQS04-TA1B				
D302	8-719-210-21	DIODE 11EQS04-TA1B				
D303	8-719-210-21	DIODE 11EQS04-TA1B				
D304	8-719-210-21	DIODE 11EQS04-TA1B				
D305	8-719-988-61	DIODE 1SS355TE-17				
D306	8-719-933-74	DIODE RD12JS-T2AB				
D351	8-719-914-43	DIODE DAN202K-T-146				
D352	8-719-067-59	DIODE MAZ9120D0LS0-TX/L (US, CND, MX)				
		< FERRITE BEAD >				
FB351	1-414-553-11	FERRITE	0uH (US, CND, MX)			
FB352	1-414-553-11	FERRITE	0uH (US, CND, MX)			
		< IC >				
IC101	8-759-712-02	IC NJM2114D				
IC102	8-759-712-02	IC NJM2114D				
IC103	8-759-712-02	IC NJM2114D				
IC201	8-759-712-02	IC NJM2114D				
IC251	8-759-711-85	IC NJM4580E-D-TE2				
IC301	8-759-711-85	IC NJM4580E-D-TE2				
IC351	8-759-231-53	IC M5F7805L				

Ref. No.	Part No.	Description				Remark
IC352	8-749-017-80	IC GP1FA551TZ				
		< JACK >				
J101	1-785-489-11	JACK, PIN 6P (5.1CH OUTPUT)				
J201	1-785-868-21	JACK, PIN 2P (AUDIO OUT) (AEP, UK, RUS)				
J202	1-784-430-11	JACK, PIN 4P (AUDIO OUT)				(US, CND, MX, HK, KR)
J351	1-784-432-11	JACK, PIN 1P (COAXIAL)				
J352	1-764-188-21	JACK (SMALL TYPE) (DIA. 3.5) (S-LINK)				(US, CND, MX)
		< JUMPER RESISTOR >				
JR100	1-216-295-91	SHORT	0			
JR101	1-216-295-91	SHORT	0			
JR102	1-216-295-91	SHORT	0			
		< TRANSISTOR >				
Q101	8-729-046-97	TRANSISTOR	2SD1938 (F)-T (TX).SO			
Q102	8-729-046-97	TRANSISTOR	2SD1938 (F)-T (TX).SO			
Q103	8-729-046-97	TRANSISTOR	2SD1938 (F)-T (TX).SO			
Q104	8-729-046-97	TRANSISTOR	2SD1938 (F)-T (TX).SO			
Q105	8-729-046-97	TRANSISTOR	2SD1938 (F)-T (TX).SO			
Q106	8-729-046-97	TRANSISTOR	2SD1938 (F)-T (TX).SO			
Q201	8-729-046-97	TRANSISTOR	2SD1938 (F)-T (TX).SO			
Q202	8-729-046-97	TRANSISTOR	2SD1938 (F)-T (TX).SO			
Q251	8-729-046-97	TRANSISTOR	2SD1938 (F)-T (TX).SO			
Q252	8-729-046-97	TRANSISTOR	2SD1938 (F)-T (TX).SO			
Q301	8-729-141-10	TRANSISTOR	2SA985A-QP			
Q302	8-729-141-58	TRANSISTOR	2SC2275A-QP			
Q303	8-729-224-62	TRANSISTOR	2SK246GR-TPE2			
Q351	8-729-230-49	TRANSISTOR	2SC2712-YG-TE85L			
Q352	8-729-421-19	TRANSISTOR	UN2213-TX			
Q353	8-729-027-53	TRANSISTOR	DTC124TKA-T146			
Q354	8-729-424-02	TRANSISTOR	2SB709A-QRS-TX			
Q355	8-729-421-19	TRANSISTOR	UN2213-TX			
Q356	8-729-027-53	TRANSISTOR	DTC124TKA-T146			
Q357	8-729-424-02	TRANSISTOR	2SB709A-QRS-TX			
Q358	8-729-421-19	TRANSISTOR	UN2213-TX			
Q359	8-729-027-53	TRANSISTOR	DTC124TKA-T146			
Q360	8-729-424-02	TRANSISTOR	2SB709A-QRS-TX			
		< RESISTOR >				
R101	1-208-782-11	METAL CHIP	1K	0.5%	1/10W	
R102	1-208-782-11	METAL CHIP	1K	0.5%	1/10W	
R103	1-208-782-11	METAL CHIP	1K	0.5%	1/10W	
R104	1-208-782-11	METAL CHIP	1K	0.5%	1/10W	
R105	1-208-782-11	METAL CHIP	1K	0.5%	1/10W	
R106	1-208-782-11	METAL CHIP	1K	0.5%	1/10W	
R107	1-208-782-11	METAL CHIP	1K	0.5%	1/10W	
R108	1-208-782-11	METAL CHIP	1K	0.5%	1/10W	
R109	1-208-782-11	METAL CHIP	1K	0.5%	1/10W	
R110	1-208-782-11	METAL CHIP	1K	0.5%	1/10W	
R111	1-208-782-11	METAL CHIP	1K	0.5%	1/10W	
R112	1-208-782-11	METAL CHIP	1K	0.5%	1/10W	
R113	1-208-782-11	METAL CHIP	1K	0.5%	1/10W	
R114	1-208-782-11	METAL CHIP	1K	0.5%	1/10W	
R115	1-208-782-11	METAL CHIP	1K	0.5%	1/10W	
R116	1-208-782-11	METAL CHIP	1K	0.5%	1/10W	
R117	1-208-782-11	METAL CHIP	1K	0.5%	1/10W	
R118	1-208-782-11	METAL CHIP	1K	0.5%	1/10W	
R119	1-208-782-11	METAL CHIP	1K	0.5%	1/10W	

Ref. No.	Part No.	Description			Remark
R120	1-208-782-11	METAL CHIP	1K	0.5%	1/10W
R121	1-208-782-11	METAL CHIP	1K	0.5%	1/10W
R122	1-208-782-11	METAL CHIP	1K	0.5%	1/10W
R123	1-216-660-11	METAL CHIP	2.4K	0.5%	1/10W
R124	1-216-660-11	METAL CHIP	2.4K	0.5%	1/10W
R125	1-208-796-11	METAL CHIP	3.9K	0.5%	1/10W
R126	1-216-660-11	METAL CHIP	2.4K	0.5%	1/10W
R127	1-216-660-11	METAL CHIP	2.4K	0.5%	1/10W
R128	1-216-660-11	METAL CHIP	2.4K	0.5%	1/10W
R129	1-208-778-11	METAL CHIP	680	0.5%	1/10W
R130	1-208-778-11	METAL CHIP	680	0.5%	1/10W
R131	1-208-784-11	METAL CHIP	1.2K	0.5%	1/10W
R132	1-208-778-11	METAL CHIP	680	0.5%	1/10W
R133	1-208-778-11	METAL CHIP	680	0.5%	1/10W
R134	1-208-778-11	METAL CHIP	680	0.5%	1/10W
R135	1-208-778-11	METAL CHIP	680	0.5%	1/10W
R136	1-208-784-11	METAL CHIP	1.2K	0.5%	1/10W
R137	1-208-778-11	METAL CHIP	680	0.5%	1/10W
R138	1-216-660-11	METAL CHIP	2.4K	0.5%	1/10W
R139	1-208-778-11	METAL CHIP	680	0.5%	1/10W
R140	1-216-660-11	METAL CHIP	2.4K	0.5%	1/10W
R141	1-208-778-11	METAL CHIP	680	0.5%	1/10W
R142	1-208-796-11	METAL CHIP	3.9K	0.5%	1/10W
R143	1-208-778-11	METAL CHIP	680	0.5%	1/10W
R144	1-216-660-11	METAL CHIP	2.4K	0.5%	1/10W
R145	1-216-660-11	METAL CHIP	2.4K	0.5%	1/10W
R146	1-216-660-11	METAL CHIP	2.4K	0.5%	1/10W
R147	1-259-420-11	CARBON	470	5%	1/6W
R148	1-259-420-11	CARBON	470	5%	1/6W
R149	1-259-420-11	CARBON	470	5%	1/6W
R150	1-259-420-11	CARBON	470	5%	1/6W
R151	1-259-420-11	CARBON	470	5%	1/6W
R152	1-259-420-11	CARBON	470	5%	1/6W
R153	1-208-822-11	METAL CHIP	47K	0.5%	1/10W
R154	1-208-822-11	METAL CHIP	47K	0.5%	1/10W
R155	1-208-822-11	METAL CHIP	47K	0.5%	1/10W
R156	1-208-822-11	METAL CHIP	47K	0.5%	1/10W
R157	1-208-822-11	METAL CHIP	47K	0.5%	1/10W
R158	1-208-822-11	METAL CHIP	47K	0.5%	1/10W
R159	1-208-794-11	METAL CHIP	3.3K	0.5%	1/10W
R160	1-208-794-11	METAL CHIP	3.3K	0.5%	1/10W
R161	1-208-794-11	METAL CHIP	3.3K	0.5%	1/10W
R162	1-208-794-11	METAL CHIP	3.3K	0.5%	1/10W
R163	1-208-830-11	METAL CHIP	100K	0.5%	1/10W
R164	1-208-794-11	METAL CHIP	3.3K	0.5%	1/10W
R165	1-208-794-11	METAL CHIP	3.3K	0.5%	1/10W
R166	1-208-774-11	METAL CHIP	470	0.5%	1/10W
R167	1-208-774-11	METAL CHIP	470	0.5%	1/10W
R168	1-208-774-11	METAL CHIP	470	0.5%	1/10W
R169	1-208-774-11	METAL CHIP	470	0.5%	1/10W
R170	1-208-774-11	METAL CHIP	470	0.5%	1/10W
R171	1-208-774-11	METAL CHIP	470	0.5%	1/10W
R201	1-208-782-11	METAL CHIP	1K	0.5%	1/10W
R202	1-208-782-11	METAL CHIP	1K	0.5%	1/10W
R203	1-208-782-11	METAL CHIP	1K	0.5%	1/10W
R204	1-208-782-11	METAL CHIP	1K	0.5%	1/10W
R205	1-208-782-11	METAL CHIP	1K	0.5%	1/10W
R206	1-208-782-11	METAL CHIP	1K	0.5%	1/10W
R207	1-208-782-11	METAL CHIP	1K	0.5%	1/10W
R208	1-208-782-11	METAL CHIP	1K	0.5%	1/10W

Ref. No.	Part No.	Description			Remark
R209	1-216-660-11	METAL CHIP	2.4K	0.5%	1/10W
R210	1-216-660-11	METAL CHIP	2.4K	0.5%	1/10W
R211	1-208-778-11	METAL CHIP	680	0.5%	1/10W
R212	1-208-778-11	METAL CHIP	680	0.5%	1/10W
R213	1-208-778-11	METAL CHIP	680	0.5%	1/10W
R214	1-216-660-11	METAL CHIP	2.4K	0.5%	1/10W
R215	1-208-778-11	METAL CHIP	680	0.5%	1/10W
R216	1-216-660-11	METAL CHIP	2.4K	0.5%	1/10W
R217	1-259-412-11	CARBON	220	5%	1/6W
R218	1-259-412-11	CARBON	220	5%	1/6W
R219	1-208-822-11	METAL CHIP	47K	0.5%	1/10W
R220	1-208-822-11	METAL CHIP	47K	0.5%	1/10W
R221	1-208-782-11	METAL CHIP	1K	0.5%	1/10W
					(AEP, UK, RUS)
R222	1-208-782-11	METAL CHIP	1K	0.5%	1/10W
					(AEP, UK, RUS)
R223	1-208-794-11	METAL CHIP	3.3K	0.5%	1/10W
R224	1-208-794-11	METAL CHIP	3.3K	0.5%	1/10W
R225	1-208-830-11	METAL CHIP	100K	0.5%	1/10W
R226	1-208-830-11	METAL CHIP	100K	0.5%	1/10W
R227	1-259-420-11	CARBON	470	5%	1/6W
R228	1-259-420-11	CARBON	470	5%	1/6W
R229	1-259-420-11	CARBON	470	5%	1/6W
					(US, CND, MX, HK, KR)
R230	1-259-420-11	CARBON	470	5%	1/6W
					(US, CND, MX, HK, KR)
R231	1-216-295-91	SHORT	0		
R232	1-216-295-91	SHORT	0		
R233	1-216-295-91	SHORT	0 (US, CND, MX, HK, KR)		
R234	1-216-295-91	SHORT	0 (US, CND, MX, HK, KR)		
R251	1-208-818-11	METAL CHIP	33K	0.5%	1/10W
R252	1-208-806-11	METAL CHIP	10K	0.5%	1/10W
R253	1-208-818-11	METAL CHIP	33K	0.5%	1/10W
R254	1-208-818-11	METAL CHIP	33K	0.5%	1/10W
R255	1-208-806-11	METAL CHIP	10K	0.5%	1/10W
R256	1-208-818-11	METAL CHIP	33K	0.5%	1/10W
R257	1-259-404-11	CARBON	100	5%	1/6W
R258	1-259-404-11	CARBON	100	5%	1/6W
R259	1-208-794-11	METAL CHIP	3.3K	0.5%	1/10W
R260	1-208-794-11	METAL CHIP	3.3K	0.5%	1/10W
R261	1-259-412-11	CARBON	220	5%	1/6W
R262	1-259-412-11	CARBON	220	5%	1/6W
R263	1-208-818-11	METAL CHIP	33K	0.5%	1/10W
R264	1-208-818-11	METAL CHIP	33K	0.5%	1/10W
R265	1-208-830-11	METAL CHIP	100K	0.5%	1/10W
R301	1-259-440-11	CARBON	3.3K	5%	1/6W
R302	1-259-404-11	CARBON	100	5%	1/6W
R303	1-259-440-11	CARBON	3.3K	5%	1/6W
R304	1-259-404-11	CARBON	100	5%	1/6W
R305	1-259-404-11	CARBON	100	5%	1/6W
R306	1-259-466-11	CARBON	39K	5%	1/6W
R351	1-259-428-11	CARBON	1K	5%	1/6W
R352	1-259-428-11	CARBON	1K	5%	1/6W
R353	1-259-428-11	CARBON	1K	5%	1/6W
R354	1-259-412-11	CARBON	220	5%	1/6W
R355	1-259-400-11	CARBON	68	5%	1/6W
R356	1-259-452-11	CARBON	10K	5%	1/6W
R357	1-216-295-91	SHORT	0		
R358	1-216-295-91	SHORT	0		
R359	1-208-798-11	METAL CHIP	4.7K	0.5%	1/10W

Ref. No.	Part No.	Description			Remark
R360	1-208-798-11	METAL CHIP	4.7K	0.5%	1/10W
R361	1-208-798-11	METAL CHIP	4.7K	0.5%	1/10W
R362	1-208-806-11	METAL CHIP	10K	0.5%	1/10W
R363	1-208-806-11	METAL CHIP	10K	0.5%	1/10W
R364	1-208-822-11	METAL CHIP	47K	0.5%	1/10W
R365	1-208-806-11	METAL CHIP	10K	0.5%	1/10W
R366	1-208-806-11	METAL CHIP	10K	0.5%	1/10W
R367	1-208-806-11	METAL CHIP	10K	0.5%	1/10W
R368	1-208-822-11	METAL CHIP	47K	0.5%	1/10W
R369	1-208-806-11	METAL CHIP	10K	0.5%	1/10W
R370	1-208-806-11	METAL CHIP	10K	0.5%	1/10W
R371	1-208-806-11	METAL CHIP	10K	0.5%	1/10W
R372	1-208-822-11	METAL CHIP	47K	0.5%	1/10W
R373	1-208-806-11	METAL CHIP	10K	0.5%	1/10W
R374	1-208-782-11	METAL CHIP	1K	0.5%	1/10W
					(US, CND, MX)

* A-6065-783-A EV-14 BOARD, COMPLETE (AEP, UK, RUS)

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(Ref.No. 4,000 Series)

< CAPACITOR >

Ref. No.	Part No.	Description			Remark
C101	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C102	1-165-873-21	ELECT	56uF	20%	10V
C103	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C104	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C105	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C106	1-126-947-11	ELECT	47uF	20%	16V
C107	1-126-947-11	ELECT	47uF	20%	16V
C108	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C109	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C110	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C111	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C112	1-126-947-11	ELECT	47uF	20%	16V
C113	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C114	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C115	1-126-947-11	ELECT	47uF	20%	16V
C116	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C118	1-127-956-21	FILM CHIP	0.1uF	5%	16V
C119	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C120	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C121	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C122	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C123	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C124	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C125	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C126	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C127	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C128	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C129	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C130	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C131	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C132	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C133	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C134	1-126-947-11	ELECT	47uF	20%	16V
C135	1-126-947-11	ELECT	47uF	20%	16V
C136	1-128-551-11	ELECT	22uF	20%	25V
C137	1-128-551-11	ELECT	22uF	20%	25V
C138	1-127-956-21	FILM CHIP	0.1uF	5%	16V
C139	1-127-956-21	FILM CHIP	0.1uF	5%	16V
C140	1-127-956-21	FILM CHIP	0.1uF	5%	16V
C141	1-127-956-21	FILM CHIP	0.1uF	5%	16V
C142	1-126-947-11	ELECT	47uF	20%	16V
C143	1-126-947-11	ELECT	47uF	20%	16V
C144	1-126-947-11	ELECT	47uF	20%	16V
C145	1-126-947-11	ELECT	47uF	20%	16V
C146	1-126-947-11	ELECT	47uF	20%	16V
C147	1-126-947-11	ELECT	47uF	20%	16V
C148	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C149	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C150	1-126-947-11	ELECT	47uF	20%	16V
C152	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C153	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C154	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C155	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C156	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C157	1-163-085-00	CERAMIC CHIP	2PF	0.25PF	50V
C158	1-163-085-00	CERAMIC CHIP	2PF	0.25PF	50V
C159	1-163-085-00	CERAMIC CHIP	2PF	0.25PF	50V
C201	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C202	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C203	1-126-947-11	ELECT	47uF	20%	16V
C204	1-126-947-11	ELECT	47uF	20%	16V
C208	1-126-947-11	ELECT	47uF	20%	16V
C209	1-126-947-11	ELECT	47uF	20%	16V
C210	1-126-947-11	ELECT	47uF	20%	16V
C211	1-126-947-11	ELECT	47uF	20%	16V
C212	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C213	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C214	1-126-947-11	ELECT	47uF	20%	16V
C215	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C216	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C217	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C218	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C219	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C220	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C221	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C222	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C223	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C225	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C226	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C228	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C229	1-163-251-11	CERAMIC CHIP	100PF	5%	50V

< CONNECTOR >

Ref. No.	Part No.	Description
CN101	1-779-937-11	CONNECTOR, FFC/FPC 19P
CN102	1-778-315-11	PIN, CONNECTOR (PC BOARD) 5P
CN201	1-778-063-41	PIN, CONNECTOR (PC BOARD) 4P
CN202	1-816-044-11	CONNECTOR, SQUARE TYPE 21P
CN203	1-816-044-11	CONNECTOR, SQUARE TYPE 21P

< DIODE >

Ref. No.	Part No.	Description	
D101	8-719-071-15	DIODE	HZM6.8ZWA1TL
D102	8-719-071-15	DIODE	HZM6.8ZWA1TL
D103	8-719-066-16	DIODE	RB491D-T146
D104	8-719-066-16	DIODE	RB491D-T146
D201	8-719-988-61	DIODE	1SS355TE-17
D202	8-719-988-61	DIODE	1SS355TE-17
D203	8-719-988-61	DIODE	1SS355TE-17
D204	8-719-988-61	DIODE	1SS355TE-17
D205	8-719-988-61	DIODE	1SS355TE-17

Ref. No.	Part No.	Description		Remark
D206	8-719-988-61	DIODE	1SS355TE-17	
D207	8-719-988-61	DIODE	1SS355TE-17	
D208	8-719-988-61	DIODE	1SS355TE-17	
D209	8-719-071-15	DIODE	HZM6.8ZWA1TL	
D210	8-719-071-15	DIODE	HZM6.8ZWA1TL	
D211	8-719-071-15	DIODE	HZM6.8ZWA1TL	
D212	8-719-071-15	DIODE	HZM6.8ZWA1TL	
D213	8-719-071-15	DIODE	HZM6.8ZWA1TL	
D214	8-719-071-15	DIODE	HZM6.8ZWA1TL	
D215	8-719-071-15	DIODE	HZM6.8ZWA1TL	
D216	8-719-071-15	DIODE	HZM6.8ZWA1TL	
D217	8-719-071-15	DIODE	HZM6.8ZWA1TL	
D218	8-719-071-15	DIODE	HZM6.8ZWA1TL	
D220	8-719-069-56	DIODE	UDZSTE-176.2B	
D221	8-719-977-40	DIODE	UDZ-TE-17-13B	
D223	8-719-069-56	DIODE	UDZSTE-176.2B	
D224	8-719-977-40	DIODE	UDZ-TE-17-13B	
D225	8-719-988-61	DIODE	1SS355TE-17	
D226	8-719-988-61	DIODE	1SS355TE-17	
		< FERRITE BEAD >		
FB201	1-414-553-11	FERRITE	0uH	
FB202	1-414-553-11	FERRITE	0uH	
FB203	1-414-553-11	FERRITE	0uH	
FB204	1-414-553-11	FERRITE	0uH	
FB205	1-414-553-11	FERRITE	0uH	
FB206	1-414-553-11	FERRITE	0uH	
FB207	1-414-553-11	FERRITE	0uH	
FB208	1-414-553-11	FERRITE	0uH	
FB209	1-414-553-11	FERRITE	0uH	
FB210	1-414-553-11	FERRITE	0uH	
FB211	1-414-553-11	FERRITE	0uH	
FB212	1-414-553-11	FERRITE	0uH	
FB213	1-414-553-11	FERRITE	0uH	
FB214	1-414-553-11	FERRITE	0uH	
FB215	1-414-553-11	FERRITE	0uH	
FB216	1-414-553-11	FERRITE	0uH	
FB217	1-414-553-11	FERRITE	0uH	
FB218	1-414-553-11	FERRITE	0uH	
		< FILTER >		
FL101	1-233-893-21	FILTER, CHIP EMI		
FL102	1-233-893-21	FILTER, CHIP EMI		
FL103	1-233-893-21	FILTER, CHIP EMI		
FL104	1-234-604-21	FILTER, LOW PASS (6.75MHz)		
FL105	1-234-604-21	FILTER, LOW PASS (6.75MHz)		
FL106	1-234-604-21	FILTER, LOW PASS (6.75MHz)		
FL107	1-234-604-21	FILTER, LOW PASS (6.75MHz)		
FL108	1-234-604-21	FILTER, LOW PASS (6.75MHz)		
FL109	1-234-604-21	FILTER, LOW PASS (6.75MHz)		
FL110	1-234-177-21	FILTER, CHIP EMI		
FL111	1-234-177-21	FILTER, CHIP EMI		
FL112	1-234-177-21	FILTER, CHIP EMI		
		< IC >		
IC101	8-759-460-72	IC	BA033FP-E2	
IC102	8-759-684-19	IC	ADV7190KST	
IC103	8-759-521-90	IC	PQ05DZ5U	
IC104	8-759-667-17	IC	L79M05TLL-SONY-TL	
IC105	8-759-684-20	IC	LA7104M-TLM	
IC106	6-701-080-01	IC	TK15450LTL	
IC107	6-701-080-01	IC	TK15450LTL	
IC201	8-759-826-47	IC	LA73052-TLM	
		< JACK >		
J101	1-784-675-11	JACK, PIN 3P (COMPONENT VIDEO OUT)		
J102	1-785-867-21	JACK, PIN 1P (VIDEO OUT)		
J103	1-794-198-21	CONNECTOR, S TERMINAL (S VIDEO OUT)		
		< COIL >		
L101	1-412-064-11	INDUCTOR	100uH	
L102	1-412-064-11	INDUCTOR	100uH	
L103	1-412-060-11	INDUCTOR	22uH	
L104	1-412-060-11	INDUCTOR	22uH	
L105	1-412-064-11	INDUCTOR	100uH	
L106	1-412-064-11	INDUCTOR	100uH	
L201	1-412-064-11	INDUCTOR	100uH	
L202	1-412-064-11	INDUCTOR	100uH	
L203	1-412-064-11	INDUCTOR	100uH	
L204	1-412-064-11	INDUCTOR	100uH	
		< TRANSISTOR >		
Q101	8-729-230-49	TRANSISTOR	2SC2712-YG-TE85L	
Q102	8-729-230-49	TRANSISTOR	2SC2712-YG-TE85L	
Q103	8-729-230-49	TRANSISTOR	2SC2712-YG-TE85L	
Q104	8-729-230-49	TRANSISTOR	2SC2712-YG-TE85L	
Q105	8-729-230-49	TRANSISTOR	2SC2712-YG-TE85L	
Q106	8-729-230-49	TRANSISTOR	2SC2712-YG-TE85L	
Q107	8-729-216-22	TRANSISTOR	2SA1162-YG-TE85L	
Q108	8-729-216-22	TRANSISTOR	2SA1162-YG-TE85L	
Q109	8-729-216-22	TRANSISTOR	2SA1162-YG-TE85L	
Q110	8-729-216-22	TRANSISTOR	2SA1162-YG-TE85L	
Q111	8-729-216-22	TRANSISTOR	2SA1162-YG-TE85L	
Q112	8-729-216-22	TRANSISTOR	2SA1162-YG-TE85L	
Q113	8-729-230-49	TRANSISTOR	2SC2712-YG-TE85L	
Q114	8-729-230-49	TRANSISTOR	2SC2712-YG-TE85L	
Q115	8-729-230-49	TRANSISTOR	2SC2712-YG-TE85L	
Q116	8-729-230-49	TRANSISTOR	2SC2712-YG-TE85L	
Q117	8-729-230-49	TRANSISTOR	2SC2712-YG-TE85L	
Q118	8-729-230-49	TRANSISTOR	2SC2712-YG-TE85L	
Q119	8-729-421-19	TRANSISTOR	UN2213-TX	
Q120	8-729-230-49	TRANSISTOR	2SC2712-YG-TE85L	
Q121	8-729-424-08	TRANSISTOR	UN2111-TX	
Q122	8-729-421-19	TRANSISTOR	UN2213-TX	
Q123	8-729-424-08	TRANSISTOR	UN2111-TX	
Q124	8-729-424-08	TRANSISTOR	UN2111-TX	
Q125	8-729-046-97	TRANSISTOR	2SD1938 (F)-T (TX).SO	
Q126	8-729-046-97	TRANSISTOR	2SD1938 (F)-T (TX).SO	
Q127	8-729-046-97	TRANSISTOR	2SD1938 (F)-T (TX).SO	
Q128	8-729-421-19	TRANSISTOR	UN2213-TX	
Q129	8-729-424-08	TRANSISTOR	UN2111-TX	
Q130	8-729-230-49	TRANSISTOR	2SC2712-YG-TE85L	
Q131	8-729-230-49	TRANSISTOR	2SC2712-YG-TE85L	
Q132	8-729-230-49	TRANSISTOR	2SC2712-YG-TE85L	
Q133	8-729-230-49	TRANSISTOR	2SC2712-YG-TE85L	
Q134	8-729-230-49	TRANSISTOR	2SC2712-YG-TE85L	
Q201	8-729-421-19	TRANSISTOR	UN2213-TX	
Q202	8-729-424-08	TRANSISTOR	UN2111-TX	
Q203	8-729-421-19	TRANSISTOR	UN2213-TX	
Q204	8-729-424-08	TRANSISTOR	UN2111-TX	

Ref. No.	Part No.	Description				Remark
Q205	8-729-421-22	TRANSISTOR	UN2211-TX			
Q206	8-729-421-19	TRANSISTOR	UN2213-TX			
Q207	8-729-424-08	TRANSISTOR	UN2111-TX			
Q208	8-729-422-27	TRANSISTOR	2SD601A-QRS-TX			
Q209	8-729-422-27	TRANSISTOR	2SD601A-QRS-TX			
Q210	8-729-422-27	TRANSISTOR	2SD601A-QRS-TX			
Q211	8-729-422-27	TRANSISTOR	2SD601A-QRS-TX			
Q212	8-729-422-27	TRANSISTOR	2SD601A-QRS-TX			
Q213	8-729-422-27	TRANSISTOR	2SD601A-QRS-TX			
Q214	8-729-421-19	TRANSISTOR	UN2213-TX			
		< RESISTOR >				
R101	1-216-001-00	METAL CHIP	10	5%	1/10W	
R102	1-216-073-91	RES-CHIP	10K	5%	1/10W	
R103	1-216-073-91	RES-CHIP	10K	5%	1/10W	
R104	1-216-073-91	RES-CHIP	10K	5%	1/10W	
R105	1-216-049-11	RES-CHIP	1K	5%	1/10W	
R106	1-216-073-91	RES-CHIP	10K	5%	1/10W	
R107	1-216-025-11	RES-CHIP	100	5%	1/10W	
R108	1-216-025-11	RES-CHIP	100	5%	1/10W	
R109	1-216-017-91	RES-CHIP	47	5%	1/10W	
R110	1-208-770-11	METAL CHIP	330	0.5%	1/10W	
R111	1-208-770-11	METAL CHIP	330	0.5%	1/10W	
R112	1-208-770-11	METAL CHIP	330	0.5%	1/10W	
R113	1-208-770-11	METAL CHIP	330	0.5%	1/10W	
R114	1-208-770-11	METAL CHIP	330	0.5%	1/10W	
R115	1-208-770-11	METAL CHIP	330	0.5%	1/10W	
R117	1-216-049-11	RES-CHIP	1K	5%	1/10W	
R118	1-216-049-11	RES-CHIP	1K	5%	1/10W	
R119	1-216-009-91	RES-CHIP	22	5%	1/10W	
R126	1-216-295-91	SHORT	0			
R127	1-216-295-91	SHORT	0			
R128	1-216-295-91	SHORT	0			
R129	1-216-295-91	SHORT	0			
R130	1-216-295-91	SHORT	0			
R131	1-216-295-91	SHORT	0			
R132	1-216-009-91	RES-CHIP	22	5%	1/10W	
R133	1-216-009-91	RES-CHIP	22	5%	1/10W	
R134	1-216-009-91	RES-CHIP	22	5%	1/10W	
R135	1-216-009-91	RES-CHIP	22	5%	1/10W	
R136	1-216-009-91	RES-CHIP	22	5%	1/10W	
R137	1-216-009-91	RES-CHIP	22	5%	1/10W	
R138	1-216-049-11	RES-CHIP	1K	5%	1/10W	
R139	1-216-049-11	RES-CHIP	1K	5%	1/10W	
R140	1-216-049-11	RES-CHIP	1K	5%	1/10W	
R141	1-216-049-11	RES-CHIP	1K	5%	1/10W	
R142	1-216-049-11	RES-CHIP	1K	5%	1/10W	
R143	1-216-049-11	RES-CHIP	1K	5%	1/10W	
R144	1-211-966-11	METAL CHIP	39	0.5%	1/10W	
R145	1-211-966-11	METAL CHIP	39	0.5%	1/10W	
R146	1-211-966-11	METAL CHIP	39	0.5%	1/10W	
R147	1-211-966-11	METAL CHIP	39	0.5%	1/10W	
R148	1-211-966-11	METAL CHIP	39	0.5%	1/10W	
R149	1-211-966-11	METAL CHIP	39	0.5%	1/10W	
R150	1-208-764-11	METAL CHIP	180	0.5%	1/10W	
R151	1-208-764-11	METAL CHIP	180	0.5%	1/10W	
R152	1-208-764-11	METAL CHIP	180	0.5%	1/10W	
R153	1-208-764-11	METAL CHIP	180	0.5%	1/10W	
R154	1-208-764-11	METAL CHIP	180	0.5%	1/10W	
R155	1-208-764-11	METAL CHIP	180	0.5%	1/10W	

Ref. No.	Part No.	Description			Remark
R156	1-208-790-11	METAL CHIP	2.2K	0.5%	1/10W
R157	1-208-790-11	METAL CHIP	2.2K	0.5%	1/10W
R158	1-208-790-11	METAL CHIP	2.2K	0.5%	1/10W
R159	1-208-790-11	METAL CHIP	2.2K	0.5%	1/10W
R160	1-208-790-11	METAL CHIP	2.2K	0.5%	1/10W
R161	1-208-790-11	METAL CHIP	2.2K	0.5%	1/10W
R162	1-216-049-11	RES-CHIP	1K	5%	1/10W
R163	1-216-049-11	RES-CHIP	1K	5%	1/10W
R164	1-216-049-11	RES-CHIP	1K	5%	1/10W
R165	1-216-049-11	RES-CHIP	1K	5%	1/10W
R166	1-216-049-11	RES-CHIP	1K	5%	1/10W
R167	1-216-049-11	RES-CHIP	1K	5%	1/10W
R168	1-216-009-91	RES-CHIP	22	5%	1/10W
R169	1-216-009-91	RES-CHIP	22	5%	1/10W
R170	1-216-009-91	RES-CHIP	22	5%	1/10W
R171	1-216-009-91	RES-CHIP	22	5%	1/10W
R172	1-216-009-91	RES-CHIP	22	5%	1/10W
R173	1-216-009-91	RES-CHIP	22	5%	1/10W
R174	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R175	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R176	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R177	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R178	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R179	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R180	1-216-009-91	RES-CHIP	22	5%	1/10W
R181	1-216-073-91	RES-CHIP	10K	5%	1/10W
R182	1-216-089-91	RES-CHIP	47K	5%	1/10W
R183	1-216-089-91	RES-CHIP	47K	5%	1/10W
R184	1-216-089-91	RES-CHIP	47K	5%	1/10W
R188	1-216-081-00	METAL CHIP	22K	5%	1/10W
R189	1-216-049-11	RES-CHIP	1K	5%	1/10W
R190	1-216-049-11	RES-CHIP	1K	5%	1/10W
R191	1-216-089-91	RES-CHIP	47K	5%	1/10W
R192	1-216-073-91	RES-CHIP	10K	5%	1/10W
R193	1-216-073-91	RES-CHIP	10K	5%	1/10W
R194	1-216-073-91	RES-CHIP	10K	5%	1/10W
R195	1-216-049-11	RES-CHIP	1K	5%	1/10W
R196	1-216-049-11	RES-CHIP	1K	5%	1/10W
R197	1-216-049-11	RES-CHIP	1K	5%	1/10W
R198	1-216-001-00	METAL CHIP	10	5%	1/10W
R199	1-216-001-00	METAL CHIP	10	5%	1/10W
R201	1-216-081-00	METAL CHIP	22K	5%	1/10W
R204	1-216-049-11	RES-CHIP	1K	5%	1/10W
R209	1-216-039-00	METAL CHIP	390	5%	1/10W
R210	1-216-039-00	METAL CHIP	390	5%	1/10W
R211	1-216-039-00	METAL CHIP	390	5%	1/10W
R212	1-216-039-00	METAL CHIP	390	5%	1/10W
R213	1-216-089-91	RES-CHIP	47K	5%	1/10W
R214	1-216-089-91	RES-CHIP	47K	5%	1/10W
R219	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R220	1-216-047-91	RES-CHIP	820	5%	1/10W
R221	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R222	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R225	1-216-049-11	RES-CHIP	1K	5%	1/10W
R226	1-216-041-00	METAL CHIP	470	5%	1/10W
R227	1-216-041-00	METAL CHIP	470	5%	1/10W
R228	1-216-041-00	METAL CHIP	470	5%	1/10W
R229	1-216-041-00	METAL CHIP	470	5%	1/10W
R234	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R235	1-216-065-91	RES-CHIP	4.7K	5%	1/10W

EV-14 FL-125

Ref. No.	Part No.	Description			Remark
R236	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R237	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R238	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R239	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R240	1-216-295-91	SHORT	0		
R242	1-216-025-11	RES-CHIP	100	5%	1/10W
R243	1-216-017-91	RES-CHIP	47	5%	1/10W
R245	1-216-295-91	SHORT	0		
R247	1-216-081-00	METAL CHIP	22K	5%	1/10W
R401	1-216-001-00	METAL CHIP	10	5%	1/10W
R402	1-216-001-00	METAL CHIP	10	5%	1/10W
R403	1-216-001-00	METAL CHIP	10	5%	1/10W
R404	1-216-001-00	METAL CHIP	10	5%	1/10W
R405	1-216-009-91	RES-CHIP	22	5%	1/10W
R406	1-208-790-11	METAL CHIP	2.2K	0.5%	1/10W
R407	1-208-790-11	METAL CHIP	2.2K	0.5%	1/10W
R408	1-208-790-11	METAL CHIP	2.2K	0.5%	1/10W
R410	1-208-792-11	METAL CHIP	2.7K	0.5%	1/10W
R411	1-208-792-11	METAL CHIP	2.7K	0.5%	1/10W
R412	1-208-792-11	METAL CHIP	2.7K	0.5%	1/10W
R413	1-216-073-91	RES-CHIP	10K	5%	1/10W
R419	1-216-295-91	SHORT	0		
R420	1-216-295-91	SHORT	0		
R421	1-216-295-91	SHORT	0		
R422	1-216-295-91	SHORT	0		
R423	1-216-295-91	SHORT	0		
R424	1-216-295-91	SHORT	0		
R425	1-216-009-91	RES-CHIP	22	5%	1/10W
R436	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R437	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R438	1-216-009-91	RES-CHIP	22	5%	1/10W
R439	1-216-009-91	RES-CHIP	22	5%	1/10W
R440	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R441	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R442	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R443	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R444	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R445	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
		< VARIABLE RESISTOR >			
RV101	1-223-582-11	RES, ADJ, CARBON 470 (N LEVEL)			
RV102	1-223-582-11	RES, ADJ, CARBON 470 (S LEVEL)			
		< RELAY >			
RY201	1-515-622-11	RELAY			
RY202	1-515-622-11	RELAY			
RY203	1-515-622-11	RELAY			
RY204	1-515-622-11	RELAY			
RY205	1-515-622-11	RELAY			
RY206	1-515-622-11	RELAY			

*	A-6065-766-A	FL-125 BOARD, COMPLETE (US, CND, MX)
*	A-6065-772-A	FL-125 BOARD, COMPLETE (HK, KR)
*	A-6065-781-A	FL-125 BOARD, COMPLETE (AEP, UK, RUS)

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(Ref.No. 1,000 Series)

	3-070-882-01	HOLDER, FL

Ref. No.	Part No.	Description				Remark
		< BUZZER >				
BZ701	1-529-986-11	BUZZER, VOLTAGE				
		< CAPACITOR >				
C701	1-124-589-11	ELECT	47uF	20%	16V	
C702	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V	(US, CND, MX)
C703	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V	
C704	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V	
C705	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V	
C706	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V	(US, CND, MX)
C707	1-163-009-91	CERAMIC CHIP	0.001uF	10%	50V	(US, CND, MX)
C709	1-128-131-11	ELECT	22uF	20%	50V	
C710	1-137-150-11	FILM	0.01uF	5%	100V	
C711	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C712	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V	
C713	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V	
C715	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V	
C716	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C717	1-128-131-11	ELECT	22uF	20%	50V	
C718	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V	
C719	1-163-009-91	CERAMIC CHIP	0.001uF	10%	50V	
C720	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V	
C721	1-128-131-11	ELECT	22uF	20%	50V	
C724	1-128-131-11	ELECT	22uF	20%	50V	
C725	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C726	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C727	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
		< CONNECTOR >				
CN701	1-815-387-11	CONNECTOR, FPC/FFC 21P				
CN702	1-784-213-11	CONNECTOR, FFC/FPC 14P				
		< DIODE >				
D701	8-719-069-54	DIODE UDZSTE-175.1B (US, CND, MX)				
D702	8-719-071-15	DIODE HZM6.8ZWA1TL				
D703	8-719-071-15	DIODE HZM6.8ZWA1TL				
D704	8-719-067-82	DIODE SML-020MLTT86 (POWER)				
D705	8-719-914-43	DIODE DAN202K-T-146 (US, CND, MX)				
D706	8-719-080-49	DIODE LNJ951C4B0S0 (MULTI CHANNEL)				
D707	8-719-041-97	DIODE MA113- (TX)				
D708	8-719-041-97	DIODE MA113- (TX)				
D709	8-719-041-97	DIODE MA113- (TX)				
D710	8-719-041-97	DIODE MA113- (TX)				
D711	8-719-079-90	DIODE SML-010DT-T86 (FL OFF)				
D712	8-719-042-70	DIODE MA8300-L-TX				
D713	8-719-079-90	DIODE SML-010DT-T86 (DVD)				
D714	8-719-079-90	DIODE SML-010DT-T86 (SACD)				
D715	8-719-079-90	DIODE SML-010DT-T86 (VIDEO OFF)				
D716	8-719-054-57	DIODE UDZ-TE-17-6.8				
		< IC >				
IC701	8-749-019-10	IC GP1UD28SXK				
IC702	8-759-710-82	IC NJM2406F-TE2 (US, CND, MX)				
IC703	6-800-656-01	IC TMP86CK74F-3G50				
IC704	8-759-684-35	IC S-80830ANUP-EDT-T2				

Ref. No.	Part No.	Description			Remark
		< COIL >			
L701	1-400-096-21	INDUCTOR	47uH		
		< FLUORESCENT INDICATOR >			
ND701	1-518-773-11	INDICATOR TUBE, FLUORESCENT			
		< TRANSISTOR >			
Q702	8-729-424-02	TRANSISTOR	2SB709A-QRS-TX		(US, CND, MX)
Q703	8-729-424-18	TRANSISTOR	UN2113-TX (US, CND, MX)		
Q704	8-729-808-02	TRANSISTOR	2SD1622-T-TD		
Q705	8-729-808-02	TRANSISTOR	2SD1622-T-TD		
Q706	8-729-804-41	TRANSISTOR	2SB1122-ST-TD		
Q707	8-729-421-19	TRANSISTOR	UN2213-TX		
Q708	8-729-421-19	TRANSISTOR	UN2213-TX		
Q709	8-729-421-19	TRANSISTOR	UN2213-TX		
Q710	8-729-421-19	TRANSISTOR	UN2213-TX		
Q711	8-729-421-19	TRANSISTOR	UN2213-TX		
		< RESISTOR >			
R701	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R702	1-216-073-91	RES-CHIP	10K	5%	1/10W (AEP, UK, RUS, HK, KR)
R703	1-216-073-91	RES-CHIP	10K	5%	1/10W
R704	1-216-073-91	RES-CHIP	10K	5%	1/10W
R705	1-216-073-91	RES-CHIP	10K	5%	1/10W
R706	1-216-057-00	METAL CHIP	2.2K	5%	1/10W (US, CND, MX)
R707	1-216-017-91	RES-CHIP	47	5%	1/10W
R710	1-216-025-11	RES-CHIP	100	5%	1/10W
R711	1-216-025-11	RES-CHIP	100	5%	1/10W
R712	1-216-081-00	METAL CHIP	22K	5%	1/10W
R713	1-216-073-91	RES-CHIP	10K	5%	1/10W
R715	1-216-097-11	RES-CHIP	100K	5%	1/10W
R717	1-216-081-00	METAL CHIP	22K	5%	1/10W (US, CND, MX)
R718	1-216-081-00	METAL CHIP	22K	5%	1/10W (US, CND, MX)
R719	1-216-033-00	METAL CHIP	220	5%	1/10W
R720	1-216-073-91	RES-CHIP	10K	5%	1/10W (US, CND, MX)
R721	1-216-061-91	RES-CHIP	3.3K	5%	1/10W (US, CND, MX)
R722	1-216-049-11	RES-CHIP	1K	5%	1/10W (US, CND, MX)
R723	1-216-037-00	METAL CHIP	330	5%	1/10W
R725	1-216-057-00	METAL CHIP	2.2K	5%	1/10W (US, CND, MX)
R726	1-216-025-11	RES-CHIP	100	5%	1/10W
R727	1-216-073-91	RES-CHIP	10K	5%	1/10W
R728	1-216-063-91	RES-CHIP	3.9K	5%	1/10W
R729	1-216-025-11	RES-CHIP	100	5%	1/10W
R730	1-216-025-11	RES-CHIP	100	5%	1/10W
R731	1-216-073-91	RES-CHIP	10K	5%	1/10W
R733	1-216-073-91	RES-CHIP	10K	5%	1/10W
R735	1-216-073-91	RES-CHIP	10K	5%	1/10W
R741	1-216-013-00	METAL CHIP	33	5%	1/10W
R742	1-216-029-00	METAL CHIP	150	5%	1/10W
R743	1-216-027-00	METAL CHIP	120	5%	1/10W
R744	1-216-295-91	SHORT	0		
R745	1-216-033-00	METAL CHIP	220	5%	1/10W

Ref. No.	Part No.	Description			Remark
R750	1-216-073-91	RES-CHIP	10K	5%	1/10W
R751	1-216-097-11	RES-CHIP	100K	5%	1/10W
R753	1-216-073-91	RES-CHIP	10K	5%	1/10W
R754	1-216-073-91	RES-CHIP	10K	5%	1/10W
R755	1-216-073-91	RES-CHIP	10K	5%	1/10W
R756	1-216-033-00	METAL CHIP	220	5%	1/10W
R757	1-216-073-91	RES-CHIP	10K	5%	1/10W
R758	1-216-033-00	METAL CHIP	220	5%	1/10W
R759	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R760	1-216-033-00	METAL CHIP	220	5%	1/10W
R761	1-216-073-91	RES-CHIP	10K	5%	1/10W
		< SWITCH >			
S701	1-771-349-21	SWITCH, KEYBOARD (VIDEO OFF)			
S702	1-771-349-21	SWITCH, KEYBOARD (FL OFF)			
		< TRANSFORMER >			
T701	1-437-428-11	TRANSFORMER, D.C-D.C CONVERTER			
		< VIBRATOR >			
X701	1-781-472-21	VIBRATOR, CERAMIC (8MHz)			

Ref. No.	Part No.	Description			Remark
*	A-6065-767-A	FR-182 BOARD, COMPLETE (US, CND, MX, HK, KR)			
*	A-6065-782-A	FR-182 BOARD, COMPLETE (AEP, UK, RUS)			
		************************			
		(Ref.No. 1,000 Series)			
		< CONNECTOR >			
CN801	1-784-213-11	CONNECTOR, FFC/FPC 14P			
CN802	1-785-730-11	CONNECTOR, FFC/FPC 9P			
		< DIODE >			
D801	8-719-079-90	DIODE	SML-010DT-T86 (❚❚)		
D802	8-719-079-90	DIODE	SML-010DT-T86 (▷)		
D803	8-719-059-94	DIODE	SML-010MT-T86 (JOG)		
		< TRANSISTOR >			
Q801	8-729-421-19	TRANSISTOR	UN2213-TX		
Q802	8-729-421-19	TRANSISTOR	UN2213-TX		
Q803	8-729-421-19	TRANSISTOR	UN2213-TX		
		< RESISTOR >			
R801	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R802	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R803	1-216-029-00	METAL CHIP	150	5%	1/10W
R804	1-216-063-91	RES-CHIP	3.9K	5%	1/10W
R805	1-216-063-91	RES-CHIP	3.9K	5%	1/10W
R806	1-216-029-00	METAL CHIP	150	5%	1/10W
R807	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R808	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R809	1-216-029-00	METAL CHIP	150	5%	1/10W
R810	1-216-081-00	METAL CHIP	22K	5%	1/10W
R811	1-216-073-91	RES-CHIP	10K	5%	1/10W
R812	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R813	1-216-063-91	RES-CHIP	3.9K	5%	1/10W
R814	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R815	1-216-081-00	METAL CHIP	22K	5%	1/10W

Ref. No.	Part No.	Description	Remark
		< SWITCH >	
S801	1-771-349-21	SWITCH, KEYBOARD (▷)	
S802	1-771-349-21	SWITCH, KEYBOARD (DISPLAY)	
S803	1-771-349-21	SWITCH, KEYBOARD (❚❚)	
S804	1-771-349-21	SWITCH, KEYBOARD (MENU)	
S805	1-771-349-21	SWITCH, KEYBOARD (⏮)	
S806	1-771-349-21	SWITCH, KEYBOARD (↶ RETURN)	
S807	1-771-349-21	SWITCH, KEYBOARD (⏭)	
S808	1-771-349-21	SWITCH, KEYBOARD (TOP MENU)	
S809	1-771-349-21	SWITCH, KEYBOARD (■)	
S810	1-771-349-21	SWITCH, KEYBOARD (JOG)	
S811	1-771-349-21	SWITCH, KEYBOARD (⏏)	

Ref. No.	Part No.	Description	Remark
*	A-6065-763-A	HP-134 BOARD, COMPLETE	(US, CND, MX, HK, KR)
*	A-6065-778-A	HP-134 BOARD, COMPLETE (AEP, UK, RUS)	
		************************	
		(Ref.No. 1,000 Series)	
		< CAPACITOR >	
C501	1-163-011-11	CERAMIC CHIP 0.0015uF 10% 50V	(US, CND, MX, HK, KR)
C502	1-163-011-11	CERAMIC CHIP 0.0015uF 10% 50V	(US, CND, MX, HK, KR)
C503	1-106-347-00	MYLAR 0.0015uF 5% 50V	(AEP, UK, RUS)
C504	1-106-347-00	MYLAR 0.0015uF 5% 50V	(AEP, UK, RUS)
		< CONNECTOR >	
* CN501	1-564-001-11	PIN, CONNECTOR 2P	
		< DIODE >	
D501	8-719-071-15	DIODE HZM6.8ZWA1TL	
D502	8-719-071-15	DIODE HZM6.8ZWA1TL	
		< FERRITE BEAD >	
FB501	1-414-553-11	FERRITE 0uH	(US, CND, MX, HK, KR)
FB502	1-414-553-11	FERRITE 0uH	(US, CND, MX, HK, KR)
		< JACK >	
J501	1-785-505-41	JACK, LARGE TYPE (PHONES)	
		< VARIABLE RESISTOR >	
RV501	1-227-186-11	RES, VAR, CARBON 500/500 (LEVEL)	

Ref. No.	Part No.	Description	Remark
*	A-6065-764-A	IF-87 BOARD, COMPLETE	(US, CND, MX, HK, KR)
*	A-6065-779-A	IF-87 BOARD, COMPLETE (AEP, UK, RUS)	
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		(Ref.No. 1,000 Series)	
		< CAPACITOR >	
C401	1-163-021-91	CERAMIC CHIP 0.01uF 10% 50V	
C402	1-163-021-91	CERAMIC CHIP 0.01uF 10% 50V	
C406	1-163-021-91	CERAMIC CHIP 0.01uF 10% 50V	
C407	1-126-916-11	ELECT 1000uF 20% 6.3V	
C408	1-163-021-91	CERAMIC CHIP 0.01uF 10% 50V	
C410	1-126-916-11	ELECT 1000uF 20% 6.3V	
C411	1-163-021-91	CERAMIC CHIP 0.01uF 10% 50V	
C412	1-163-021-91	CERAMIC CHIP 0.01uF 10% 50V	
C413	1-126-933-11	ELECT 100uF 20% 16V	
C414	1-124-584-00	ELECT 100uF 20% 10V	
C415	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C416	1-128-131-11	ELECT 22uF 20% 50V	
C417	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
		< CONNECTOR >	
CN401	1-778-317-11	CONNECTOR, BOARD TO BOARD 13P	
CN402	1-564-002-11	PIN, CONNECTOR 3P	
CN403	1-770-649-11	CONNECTOR, FFC/FPC 21P	
CN404	1-506-474-11	PIN, CONNECTOR 9P	
CN405	1-506-469-11	PIN, CONNECTOR 4P	
* CN406	1-506-470-11	PIN, CONNECTOR 5P	
* CN407	1-770-639-11	CONNECTOR, FFC/FPC 8P	
* CN408	1-785-530-11	PIN, CONNECTOR (PC BOARD) 10P	
		< IC >	
IC401	8-759-832-05	IC BA18BC0FP-E2	
		< IC LINK >	
⚠PS401	1-532-637-00	LINK, IC (1.0A)	
⚠PS402	1-532-637-00	LINK, IC (1.0A)	
		< TRANSISTOR >	
Q401	8-729-048-28	TRANSISTOR 2SD1766-T100-QR	
Q402	8-729-424-08	TRANSISTOR UN2111-TX	
		< RESISTOR >	
R401	1-216-073-91	RES-CHIP 10K 5% 1/10W	
R402	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
R403	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
R405	1-216-295-91	SHORT 0	
R406	1-216-295-91	SHORT 0	
R408	1-216-025-11	RES-CHIP 100 5% 1/10W	
R409	1-216-025-11	RES-CHIP 100 5% 1/10W	
R410	1-216-025-11	RES-CHIP 100 5% 1/10W	
R411	1-216-025-11	RES-CHIP 100 5% 1/10W	
R412	1-216-025-11	RES-CHIP 100 5% 1/10W	
R413	1-216-025-11	RES-CHIP 100 5% 1/10W	
R414	1-216-025-11	RES-CHIP 100 5% 1/10W	
R417	1-216-399-00	METAL OXIDE 6.8 5% 3W	
R418	1-216-399-00	METAL OXIDE 6.8 5% 3W	

Ref. No.	Part No.	Description	Remark
*	A-6065-761-A	MB-101 BOARD, COMPLETE (US, CND)	
*	A-6065-774-A	MB-101 BOARD, COMPLETE (HK, KR)	
*	A-6065-776-A	MB-101 BOARD, COMPLETE (AEP, UK)	
*	A-6065-784-A	MB-101 BOARD, COMPLETE (RUS)	
*	A-6065-786-A	MB-101 BOARD, COMPLETE (MX)	
		***********************	
		(Ref.No. 2,000 Series)	
		< CAPACITOR >	
C102	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description			Remark
C103	1-126-209-11	ELECT CHIP	100uF	20%	4V
C104	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C105	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C106	1-162-917-11	CERAMIC CHIP	15PF	5%	50V
C107	1-164-185-11	CERAMIC CHIP	13PF	5%	50V
C108	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C109	1-126-209-11	ELECT CHIP	100uF	20%	4V
C111	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C113	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C115	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C118	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C120	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C121	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C124	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C125	1-126-607-11	ELECT CHIP	47uF	20%	4V
C126	1-126-204-11	ELECT CHIP	47uF	20%	16V
C127	1-126-246-11	ELECT CHIP	220uF	20%	4V
C128	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C201	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C202	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C203	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C204	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C210	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C211	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C212	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C213	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C214	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V
C215	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C216	1-164-230-11	CERAMIC CHIP	220PF	5%	50V
C218	1-162-965-11	CERAMIC CHIP	0.0015uF	10%	50V
C219	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C220	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C221	1-124-779-00	ELECT CHIP	10uF	20%	16V
C225	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C226	1-164-230-11	CERAMIC CHIP	220PF	5%	50V
C228	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C229	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C230	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C232	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C233	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C234	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C235	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C236	1-164-739-11	CERAMIC CHIP	560PF	5%	50V
C238	1-124-779-00	ELECT CHIP	10uF	20%	16V
C240	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C241	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C242	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C243	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C244	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C245	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C246	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C247	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C248	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C249	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C250	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C251	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C252	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C253	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C254	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C255	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C256	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C257	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C258	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C259	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C260	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C261	1-164-217-11	CERAMIC CHIP	150PF	5%	50V
C262	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C263	1-124-779-00	ELECT CHIP	10uF	20%	16V
C264	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C265	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C266	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C270	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C271	1-126-204-11	ELECT CHIP	47uF	20%	16V
C272	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C273	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C302	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C303	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C304	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C305	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C307	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C308	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C309	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C310	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C311	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C312	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C313	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C315	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C316	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C317	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C318	1-110-563-11	CERAMIC CHIP	0.068uF	10%	16V
C319	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C320	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C321	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C322	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C323	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C324	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C325	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C326	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C327	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C328	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C329	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C330	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C333	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C334	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C335	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C336	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C337	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C338	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C339	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C340	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C341	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C342	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C343	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C344	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C345	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C346	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C347	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C348	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C418	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C419	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V

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Ref. No.	Part No.	Description			Remark
C420	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C421	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C422	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C423	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C424	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C425	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C426	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C427	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C428	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C501	1-165-871-21	ELECT	22uF	20%	6.3V
C502	1-126-193-11	ELECT	1uF	20%	50V
C503	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C504	1-124-779-00	ELECT CHIP	10uF	20%	16V
C506	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C507	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C508	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C510	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C511	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C512	1-124-779-00	ELECT CHIP	10uF	20%	16V
C513	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C514	1-126-246-11	ELECT CHIP	220uF	20%	4V
C515	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C516	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C518	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C519	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C521	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C522	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C523	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C525	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C526	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C527	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C528	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C529	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C530	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C531	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C532	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C533	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C534	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C535	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C536	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C537	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C538	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C540	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C541	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C542	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C552	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C553	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C554	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C555	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C556	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C601	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C602	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C603	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C604	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C605	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C606	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C607	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C608	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C609	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C610	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V

Ref. No.	Part No.	Description			Remark
C611	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C612	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C613	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C614	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C615	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C616	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C617	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C618	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C619	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C620	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C621	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C622	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C623	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C624	1-127-950-21	FILM CHIP	0.01uF	5%	16V
C626	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C627	1-127-950-21	FILM CHIP	0.01uF	5%	16V
C628	1-127-950-21	FILM CHIP	0.01uF	5%	16V
C629	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C630	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C631	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
C632	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
C633	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
C634	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C635	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C801	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C802	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C803	1-124-779-00	ELECT CHIP	10uF	20%	16V
C804	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C805	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C808	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C809	1-126-209-11	ELECT CHIP	100uF	20%	4V
C811	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C812	1-126-209-11	ELECT CHIP	100uF	20%	4V
C813	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C814	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C815	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C816	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C817	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C818	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C819	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C820	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C821	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C822	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C823	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C824	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C825	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C826	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C827	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C828	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C829	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C830	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C831	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C832	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C833	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C834	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C835	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C836	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C837	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C838	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C839	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V

Ref. No.	Part No.	Description			Remark
C840	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C841	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C842	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C843	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C844	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
		< CONNECTOR >			
CN101	1-774-765-11	CONNECTOR, FFC/FPC 8P			
CN102	1-790-669-21	PIN, CONNECTOR (PC BOARD) 9P			
* CN104	1-770-470-21	PIN, CONNECTOR (PC BOARD) 6P			
CN201	1-779-353-21	CONNECTOR, FFC/FPC 5P			
CN203	1-815-507-21	CONNECTOR, FFC/FPC 26P			
CN204	1-779-935-11	CONNECTOR, FFC/FPC 9P			
CN502	1-778-331-11	CONNECTOR, FFC/FPC 16P (US, CND, MX, HK, KR)			
CN502	1-779-937-11	CONNECTOR, FFC/FPC 19P (AEP, UK, RUS)			
CN601	1-784-326-11	CONNECTOR, FFC/FPC 27P			
		< DIODE >			
D601	8-719-914-44	DIODE DAP202K-T-146			
D602	8-719-914-44	DIODE DAP202K-T-146			
D603	8-719-914-44	DIODE DAP202K-T-146			
		< FERRITE BEAD >			
FB101	1-469-784-11	FERRITE	0uH		
FB103	1-469-784-11	FERRITE	0uH		
FB104	1-469-324-21	FERRITE	0uH		
FB105	1-469-324-21	FERRITE	0uH		
FB106	1-469-324-21	FERRITE	0uH		
FB107	1-469-324-21	FERRITE	0uH		
FB108	1-469-324-21	FERRITE	0uH		
FB109	1-469-324-21	FERRITE	0uH		
FB110	1-469-324-21	FERRITE	0uH		
FB111	1-469-324-21	FERRITE	0uH		
FB112	1-469-784-11	FERRITE	0uH		
FB601	1-469-784-11	FERRITE	0uH		
FB602	1-469-784-11	FERRITE	0uH		
		< FILTER >			
FL101	1-234-177-21	FILTER, CHIP EMI			
FL102	1-234-177-21	FILTER, CHIP EMI			
FL103	1-234-177-21	FILTER, CHIP EMI			
FL104	1-234-177-21	FILTER, CHIP EMI			
FL105	1-234-177-21	FILTER, CHIP EMI			
FL107	1-233-893-21	FILTER, CHIP EMI			
FL108	1-234-177-21	FILTER, CHIP EMI			
FL201	1-234-177-21	FILTER, CHIP EMI			
FL403	1-234-177-21	FILTER, CHIP EMI			
FL501	1-234-177-21	FILTER, CHIP EMI			
FL502	1-234-177-21	FILTER, CHIP EMI			
FL503	1-234-177-21	FILTER, CHIP EMI			
FL601	1-234-177-21	FILTER, CHIP EMI			
FL602	1-234-177-21	FILTER, CHIP EMI			
FL603	1-234-177-21	FILTER, CHIP EMI			
FL604	1-234-177-21	FILTER, CHIP EMI			
FL801	1-234-177-21	FILTER, CHIP EMI			
FL802	1-234-177-21	FILTER, CHIP EMI			
FL803	1-234-177-21	FILTER, CHIP EMI			

Ref. No.	Part No.	Description			Remark
FL804	1-234-177-21	FILTER, CHIP EMI			
FL805	1-234-177-21	FILTER, CHIP EMI			
		< IC >			
IC101	8-759-640-40	IC BR24C04F-WE2			
IC103	8-759-831-81	IC IMIC6001BTD			
IC104	8-759-829-75	IC MB91307APFV-G-BND-E1			
IC106	Note				
IC107	Note				
IC201	8-759-828-02	IC SP3728AC			
IC202	8-759-826-42	IC FAN8034			
IC301	8-759-599-45	IC MM1385ENLE			
IC302	8-759-828-01	IC CXD9635R			
IC303	8-759-825-60	IC K4F151612D-TL60T			
IC403	6-700-772-01	IC CXD9667Q			
IC404	8-759-668-55	IC K9F3208W0A-TCB0T			
IC501	8-759-656-53	IC MM1426CNLE			
IC502	8-752-414-77	IC CXD1934Q			
IC503	8-759-599-45	IC MM1385ENLE			
IC504	8-759-826-44	IC CXD9632Q			
IC507	6-700-098-01	IC HY57V641620HGT-P-TR-V			
IC601	8-752-414-78	IC CXD1938R			
IC602	8-759-082-59	IC TC7W32FU (TE12R)			
IC603	6-700-533-01	IC CXD9674TN-E2			
IC604	6-701-674-01	IC CXD9675R-L			
IC801	8-759-588-58	IC MM1385NNLE			
IC803	8-759-663-74	IC HY57V161610DTC-7TR			
IC804	8-759-585-52	IC SN74AHC1GU04DBVR			
IC806	8-752-407-50	IC CXD2752R			
IC807	6-700-760-01	IC CXD9669R			
		< COIL >			
L201	1-412-031-11	INDUCTOR CHIP	47uH		
L202	1-412-031-11	INDUCTOR CHIP	47uH		
		< TRANSISTOR >			
Q201	8-729-903-46	TRANSISTOR	2SB1132-T100-QR		
Q202	8-729-903-46	TRANSISTOR	2SB1132-T100-QR		
		< RESISTOR >			
R101	1-216-864-11	SHORT	0		
R102	1-216-864-11	SHORT	0		
R103	1-216-864-11	SHORT	0		
R104	1-216-789-11	METAL CHIP	2.2	5%	1/16W
R105	1-216-864-11	SHORT	0		
R106	1-216-817-11	METAL CHIP	470	5%	1/16W
R107	1-216-833-11	METAL CHIP	10K	5%	1/16W
R108	1-216-821-11	METAL CHIP	1K	5%	1/16W
R109	1-216-797-11	METAL CHIP	10	5%	1/16W
R110	1-216-797-11	METAL CHIP	10	5%	1/16W
R111	1-216-821-11	METAL CHIP	1K	5%	1/16W
R112	1-216-845-11	METAL CHIP	100K	5%	1/16W
R113	1-216-845-11	METAL CHIP	100K	5%	1/16W
R114	1-216-821-11	METAL CHIP	1K	5%	1/16W
R115	1-216-821-11	METAL CHIP	1K	5%	1/16W
R117	1-216-833-11	METAL CHIP	10K	5%	1/16W

Note: Part number has not been determined yet. It will be noticed later.

Ref. No.	Part No.	Description			Remark
R118	1-216-833-11	METAL CHIP	10K	5%	1/16W
R119	1-216-797-11	METAL CHIP	10	5%	1/16W
R120	1-216-797-11	METAL CHIP	10	5%	1/16W
R121	1-216-797-11	METAL CHIP	10	5%	1/16W
R122	1-216-797-11	METAL CHIP	10	5%	1/16W
R123	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R124	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R125	1-216-833-11	METAL CHIP	10K	5%	1/16W
R128	1-216-833-11	METAL CHIP	10K	5%	1/16W
R131	1-216-833-11	METAL CHIP	10K	5%	1/16W
R132	1-216-833-11	METAL CHIP	10K	5%	1/16W
R133	1-216-833-11	METAL CHIP	10K	5%	1/16W
R135	1-216-833-11	METAL CHIP	10K	5%	1/16W
R136	1-216-833-11	METAL CHIP	10K	5%	1/16W
R137	1-216-833-11	METAL CHIP	10K	5%	1/16W
R139	1-216-833-11	METAL CHIP	10K	5%	1/16W
R140	1-216-797-11	METAL CHIP	10	5%	1/16W
R141	1-216-801-11	METAL CHIP	22	5%	1/16W
R142	1-216-797-11	METAL CHIP	10	5%	1/16W
R143	1-216-797-11	METAL CHIP	10	5%	1/16W
R144	1-216-797-11	METAL CHIP	10	5%	1/16W
R145	1-216-809-11	METAL CHIP	100	5%	1/16W
R146	1-216-797-11	METAL CHIP	10	5%	1/16W
R147	1-216-797-11	METAL CHIP	10	5%	1/16W
R148	1-216-797-11	METAL CHIP	10	5%	1/16W
R149	1-216-809-11	METAL CHIP	100	5%	1/16W
R150	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R151	1-216-801-11	METAL CHIP	22	5%	1/16W
R152	1-216-057-00	METAL CHIP	2.2K	5%	1/10W (HK, KR)
R152	1-216-065-91	RES-CHIP	4.7K	5%	1/10W (RUS)
R152	1-216-075-00	METAL CHIP	12K	5%	1/10W (AEP, UK)
R152	1-216-081-00	METAL CHIP	22K	5%	1/10W (MX)
R153	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R154	1-216-081-00	METAL CHIP	22K	5%	1/10W (US, CND, MX, HK, KR)
R154	1-216-089-91	RES-CHIP	47K	5%	1/10W (AEP, UK, RUS)
R155	1-216-833-11	METAL CHIP	10K	5%	1/16W
R156	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R157	1-216-069-00	METAL CHIP	6.8K	5%	1/10W (RUS)
R157	1-216-075-00	METAL CHIP	12K	5%	1/10W (MX)
R157	1-216-081-00	METAL CHIP	22K	5%	1/10W (HK, KR)
R157	1-216-089-91	RES-CHIP	47K	5%	1/10W (AEP, UK)
R158	1-216-833-11	METAL CHIP	10K	5%	1/16W
R159	1-216-833-11	METAL CHIP	10K	5%	1/16W
R160	1-216-809-11	METAL CHIP	100	5%	1/16W
R161	1-216-833-11	METAL CHIP	10K	5%	1/16W
R162	1-216-833-11	METAL CHIP	10K	5%	1/16W
R164	1-216-833-11	METAL CHIP	10K	5%	1/16W
R165	1-216-833-11	METAL CHIP	10K	5%	1/16W
R166	1-216-864-11	SHORT	0		
R167	1-216-864-11	SHORT	0		
R168	1-216-864-11	SHORT	0		
R169	1-216-864-11	SHORT	0		
R170	1-216-864-11	SHORT	0		
R171	1-216-833-11	METAL CHIP	10K	5%	1/16W
R172	1-216-821-11	METAL CHIP	1K	5%	1/16W
R173	1-216-829-11	METAL CHIP	4.7K	5%	1/16W (US, CND, MX, HK, KR)
R174	1-216-827-11	METAL CHIP	3.3K	5%	1/16W (AEP, UK, RUS)
R175	1-216-864-11	SHORT	0		
R176	1-216-809-11	METAL CHIP	100	5%	1/16W
R177	1-216-809-11	METAL CHIP	100	5%	1/16W
R178	1-216-809-11	METAL CHIP	100	5%	1/16W
R179	1-216-809-11	METAL CHIP	100	5%	1/16W
R180	1-216-809-11	METAL CHIP	100	5%	1/16W
R181	1-216-805-11	METAL CHIP	47	5%	1/16W
R182	1-216-805-11	METAL CHIP	47	5%	1/16W
R183	1-216-805-11	METAL CHIP	47	5%	1/16W
R184	1-216-809-11	METAL CHIP	100	5%	1/16W
R185	1-216-809-11	METAL CHIP	100	5%	1/16W
R186	1-216-805-11	METAL CHIP	47	5%	1/16W
R187	1-216-805-11	METAL CHIP	47	5%	1/16W
R206	1-216-801-11	METAL CHIP	22	5%	1/16W
R207	1-216-809-11	METAL CHIP	100	5%	1/16W
R209	1-216-837-11	METAL CHIP	22K	5%	1/16W
R210	1-216-815-11	METAL CHIP	330	5%	1/16W
R211	1-216-809-11	METAL CHIP	100	5%	1/16W
R212	1-216-809-11	METAL CHIP	100	5%	1/16W
R213	1-216-833-11	METAL CHIP	10K	5%	1/16W
R214	1-216-833-11	METAL CHIP	10K	5%	1/16W
R216	1-216-821-11	METAL CHIP	1K	5%	1/16W
R217	1-216-821-11	METAL CHIP	1K	5%	1/16W
R218	1-216-846-11	METAL CHIP	120K	5%	1/16W
R219	1-216-846-11	METAL CHIP	120K	5%	1/16W
R220	1-216-847-11	METAL CHIP	150K	5%	1/16W
R221	1-216-847-11	METAL CHIP	150K	5%	1/16W
R222	1-216-842-11	METAL CHIP	56K	5%	1/16W
R223	1-216-842-11	METAL CHIP	56K	5%	1/16W
R224	1-216-850-11	METAL CHIP	270K	5%	1/16W
R225	1-216-833-11	METAL CHIP	10K	5%	1/16W
R226	1-216-853-11	METAL CHIP	470K	5%	1/16W
R227	1-216-846-11	METAL CHIP	120K	5%	1/16W
R229	1-216-833-11	METAL CHIP	10K	5%	1/16W
R230	1-216-839-11	METAL CHIP	33K	5%	1/16W
R231	1-216-855-11	METAL CHIP	680K	5%	1/16W
R232	1-216-839-11	METAL CHIP	33K	5%	1/16W
R233	1-216-853-11	METAL CHIP	470K	5%	1/16W
R234	1-216-803-11	METAL CHIP	33	5%	1/16W
R235	1-216-809-11	METAL CHIP	100	5%	1/16W
R236	1-216-803-11	METAL CHIP	33	5%	1/16W
R238	1-216-839-11	METAL CHIP	33K	5%	1/16W
R239	1-216-839-11	METAL CHIP	33K	5%	1/16W
R240	1-216-839-11	METAL CHIP	33K	5%	1/16W
R241	1-216-839-11	METAL CHIP	33K	5%	1/16W
R242	1-216-849-11	METAL CHIP	220K	5%	1/16W
R243	1-216-853-11	METAL CHIP	470K	5%	1/16W
R244	1-216-821-11	METAL CHIP	1K	5%	1/16W
R245	1-216-841-11	METAL CHIP	47K	5%	1/16W
R246	1-216-809-11	METAL CHIP	100	5%	1/16W
R248	1-216-803-11	METAL CHIP	33	5%	1/16W
R249	1-216-803-11	METAL CHIP	33	5%	1/16W
R250	1-218-895-11	METAL CHIP	100K	0.5%	1/10W

Ref. No.	Part No.	Description			Remark
R251	1-216-841-11	METAL CHIP	47K	5%	1/16W
R252	1-216-839-11	METAL CHIP	33K	5%	1/16W
R253	1-218-889-11	METAL CHIP	56K	0.5%	1/10W
R254	1-218-895-11	METAL CHIP	100K	0.5%	1/10W
R255	1-218-889-11	METAL CHIP	56K	0.5%	1/10W
R256	1-216-809-11	METAL CHIP	100	5%	1/16W
R258	1-216-864-11	SHORT	0		
R259	1-216-833-11	METAL CHIP	10K	5%	1/16W
R260	1-216-834-11	METAL CHIP	12K	5%	1/16W
R261	1-216-833-11	METAL CHIP	10K	5%	1/16W
R262	1-216-815-11	METAL CHIP	330	5%	1/16W
R263	1-216-861-11	METAL CHIP	2.2M	5%	1/16W
R264	1-216-845-11	METAL CHIP	100K	5%	1/16W
R265	1-216-838-11	METAL CHIP	27K	5%	1/16W
R267	1-216-864-11	SHORT	0		
R268	1-216-864-11	SHORT	0		
R269	1-216-833-11	METAL CHIP	10K	5%	1/16W
R271	1-216-864-11	SHORT	0		
R274	1-216-833-11	METAL CHIP	10K	5%	1/16W
R275	1-216-833-11	METAL CHIP	10K	5%	1/16W
R276	1-216-833-11	METAL CHIP	10K	5%	1/16W
R278	1-216-833-11	METAL CHIP	10K	5%	1/16W
R279	1-216-864-11	SHORT	0		
R302	1-216-295-91	SHORT	0		
R303	1-216-295-91	SHORT	0		
R306	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R307	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R308	1-216-864-11	SHORT	0		
R309	1-216-864-11	SHORT	0		
R310	1-216-817-11	METAL CHIP	470	5%	1/16W
R311	1-216-817-11	METAL CHIP	470	5%	1/16W
R312	1-216-817-11	METAL CHIP	470	5%	1/16W
R313	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R314	1-216-833-11	METAL CHIP	10K	5%	1/16W
R315	1-216-817-11	METAL CHIP	470	5%	1/16W
R316	1-218-871-11	METAL CHIP	10K	0.5%	1/10W
R317	1-218-855-11	METAL CHIP	2.2K	0.5%	1/10W
R318	1-216-833-11	METAL CHIP	10K	5%	1/16W
R319	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R320	1-216-809-11	METAL CHIP	100	5%	1/16W
R321	1-218-879-11	METAL CHIP	22K	0.5%	1/10W
R322	1-216-864-11	SHORT	0		
R323	1-216-864-11	SHORT	0		
R324	1-218-871-11	METAL CHIP	10K	0.5%	1/10W
R325	1-218-883-11	METAL CHIP	33K	0.5%	1/10W
R326	1-218-831-11	METAL CHIP	220	0.5%	1/10W
R327	1-218-847-11	METAL CHIP	1K	0.5%	1/10W
R328	1-216-833-11	METAL CHIP	10K	5%	1/16W
R329	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R330	1-216-838-11	METAL CHIP	27K	5%	1/16W
R331	1-216-822-11	METAL CHIP	1.2K	5%	1/16W
R332	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R333	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R334	1-218-853-11	METAL CHIP	1.8K	0.5%	1/10W
R335	1-216-826-11	METAL CHIP	2.7K	5%	1/16W
R336	1-216-847-11	METAL CHIP	150K	5%	1/16W
R337	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R338	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R339	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R340	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R341	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R342	1-216-833-11	METAL CHIP	10K	5%	1/16W
R343	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R345	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R346	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R347	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R354	1-216-295-91	SHORT	0		
R355	1-216-295-91	SHORT	0		
R356	1-216-864-11	SHORT	0		
R419	1-216-864-11	SHORT	0		
R420	1-216-864-11	SHORT	0		
R421	1-216-864-11	SHORT	0		
R422	1-216-809-11	METAL CHIP	100	5%	1/16W
R424	1-216-864-11	SHORT	0		
R425	1-216-864-11	SHORT	0		
R426	1-216-864-11	SHORT	0		
R428	1-216-833-11	METAL CHIP	10K	5%	1/16W
R429	1-216-864-11	SHORT	0		
R430	1-216-864-11	SHORT	0		
R431	1-216-864-11	SHORT	0		
R433	1-216-864-11	SHORT	0		
R434	1-216-864-11	SHORT	0		
R435	1-216-864-11	SHORT	0		
R436	1-216-864-11	SHORT	0		
R437	1-216-864-11	SHORT	0		
R438	1-216-864-11	SHORT	0		
R439	1-216-864-11	SHORT	0		
R440	1-216-864-11	SHORT	0		
R441	1-216-864-11	SHORT	0		
R442	1-216-864-11	SHORT	0		
R443	1-216-864-11	SHORT	0		
R444	1-216-833-11	METAL CHIP	10K	5%	1/16W
R445	1-216-833-11	METAL CHIP	10K	5%	1/16W
R446	1-216-833-11	METAL CHIP	10K	5%	1/16W
R447	1-216-864-11	SHORT	0		
R448	1-216-833-11	METAL CHIP	10K	5%	1/16W
R449	1-216-833-11	METAL CHIP	10K	5%	1/16W
R450	1-216-833-11	METAL CHIP	10K	5%	1/16W
R451	1-216-833-11	METAL CHIP	10K	5%	1/16W
R452	1-216-833-11	METAL CHIP	10K	5%	1/16W
R453	1-216-833-11	METAL CHIP	10K	5%	1/16W
R454	1-216-833-11	METAL CHIP	10K	5%	1/16W
R455	1-216-833-11	METAL CHIP	10K	5%	1/16W
R501	1-216-864-11	SHORT	0		
R503	1-216-864-11	SHORT	0 (AEP, UK, RUS)		
R505	1-216-809-11	METAL CHIP	100	5%	1/16W
					(US, CND, MX, HK, KR)
R507	1-216-809-11	METAL CHIP	100	5%	1/16W
R508	1-216-295-91	SHORT	0		
R511	1-216-797-11	METAL CHIP	10	5%	1/16W
R512	1-216-295-91	SHORT	0		
R513	1-216-833-11	METAL CHIP	10K	5%	1/16W
R520	1-216-833-11	METAL CHIP	10K	5%	1/16W
R522	1-216-822-11	METAL CHIP	1.2K	5%	1/16W
R523	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R524	1-216-809-11	METAL CHIP	100	5%	1/16W
R525	1-216-295-91	SHORT	0		
R528	1-216-833-11	METAL CHIP	10K	5%	1/16W
R529	1-216-833-11	METAL CHIP	10K	5%	1/16W
R534	1-216-864-11	SHORT	0		

MB-101

Ref. No.	Part No.	Description			Remark
R536	1-216-797-11	METAL CHIP	10	5%	1/16W
R537	1-216-864-11	SHORT	0		
R540	1-216-809-11	METAL CHIP	100	5%	1/16W
R541	1-216-809-11	METAL CHIP	100	5%	1/16W
R542	1-216-809-11	METAL CHIP	100	5%	1/16W
R543	1-216-809-11	METAL CHIP	100	5%	1/16W
R544	1-216-809-11	METAL CHIP	100	5%	1/16W
R545	1-216-809-11	METAL CHIP	100	5%	1/16W
R546	1-216-809-11	METAL CHIP	100	5%	1/16W
R547	1-216-809-11	METAL CHIP	100	5%	1/16W
R548	1-216-809-11	METAL CHIP	100	5%	1/16W
R549	1-216-809-11	METAL CHIP	100	5%	1/16W
R550	1-216-809-11	METAL CHIP	100	5%	1/16W
					(AEP, UK, RUS)
R551	1-216-809-11	METAL CHIP	100	5%	1/16W
R552	1-216-809-11	METAL CHIP	100	5%	1/16W
					(AEP, UK, RUS)
R553	1-216-809-11	METAL CHIP	100	5%	1/16W
					(AEP, UK, RUS)
R554	1-216-809-11	METAL CHIP	100	5%	1/16W
					(AEP, UK, RUS)
R555	1-216-864-11	SHORT	0		
R556	1-216-864-11	SHORT	0		
R557	1-216-864-11	SHORT	0		
R560	1-216-797-11	METAL CHIP	10	5%	1/16W
R606	1-216-864-11	SHORT	0		
R609	1-216-864-11	SHORT	0		
R610	1-216-864-11	SHORT	0		
R615	1-216-809-11	METAL CHIP	100	5%	1/16W
R619	1-216-864-11	SHORT	0		
R620	1-216-833-11	METAL CHIP	10K	5%	1/16W
R622	1-216-833-11	METAL CHIP	10K	5%	1/16W
R623	1-216-864-11	SHORT	0		
R624	1-216-864-11	SHORT	0		
R630	1-216-864-11	SHORT	0		
R642	1-216-805-11	METAL CHIP	47	5%	1/16W
R644	1-216-864-11	SHORT	0		
R647	1-216-805-11	METAL CHIP	47	5%	1/16W
R648	1-216-864-11	SHORT	0		
R649	1-216-864-11	SHORT	0		
R652	1-216-864-11	SHORT	0		
R660	1-216-864-11	SHORT	0		
R661	1-216-864-11	SHORT	0		
R664	1-216-797-11	METAL CHIP	10	5%	1/16W
R665	1-216-833-11	METAL CHIP	10K	5%	1/16W
R666	1-216-833-11	METAL CHIP	10K	5%	1/16W
R667	1-216-833-11	METAL CHIP	10K	5%	1/16W
R668	1-216-833-11	METAL CHIP	10K	5%	1/16W
R669	1-216-864-11	SHORT	0		
R671	1-216-864-11	SHORT	0		
R672	1-216-809-11	METAL CHIP	100	5%	1/16W
R673	1-216-809-11	METAL CHIP	100	5%	1/16W
R674	1-216-809-11	METAL CHIP	100	5%	1/16W
R801	1-216-864-11	SHORT	0		
R802	1-216-864-11	SHORT	0		
R803	1-216-864-11	SHORT	0		
R804	1-216-864-11	SHORT	0		
R805	1-216-864-11	SHORT	0		
R806	1-216-864-11	SHORT	0		
R807	1-216-864-11	SHORT	0		
R808	1-216-864-11	SHORT	0		

Ref. No.	Part No.	Description			Remark
R809	1-216-864-11	SHORT	0		
R810	1-216-833-11	METAL CHIP	10K	5%	1/16W
R811	1-216-833-11	METAL CHIP	10K	5%	1/16W
R812	1-216-833-11	METAL CHIP	10K	5%	1/16W
R813	1-216-833-11	METAL CHIP	10K	5%	1/16W
R814	1-216-833-11	METAL CHIP	10K	5%	1/16W
R815	1-216-833-11	METAL CHIP	10K	5%	1/16W
R816	1-216-833-11	METAL CHIP	10K	5%	1/16W
R817	1-216-833-11	METAL CHIP	10K	5%	1/16W
R818	1-216-864-11	SHORT	0		
R820	1-216-864-11	SHORT	0		
R821	1-216-805-11	METAL CHIP	47	5%	1/16W
R822	1-216-864-11	SHORT	0		
R823	1-216-833-11	METAL CHIP	10K	5%	1/16W
R824	1-216-864-11	SHORT	0		
R826	1-216-801-11	METAL CHIP	22	5%	1/16W
R827	1-216-864-11	SHORT	0		
R828	1-216-809-11	METAL CHIP	100	5%	1/16W
R829	1-216-864-11	SHORT	0		
R830	1-216-864-11	SHORT	0		
R831	1-216-864-11	SHORT	0		
R832	1-216-864-11	SHORT	0		
R833	1-216-864-11	SHORT	0		
R834	1-216-864-11	SHORT	0		
R835	1-216-864-11	SHORT	0		
R836	1-216-864-11	SHORT	0		
R837	1-216-864-11	SHORT	0		
R838	1-216-864-11	SHORT	0		
R839	1-216-864-11	SHORT	0		
R840	1-216-864-11	SHORT	0		
R841	1-216-864-11	SHORT	0		
R842	1-216-864-11	SHORT	0		
R843	1-216-864-11	SHORT	0		
R844	1-216-833-11	METAL CHIP	10K	5%	1/16W
R845	1-216-833-11	METAL CHIP	10K	5%	1/16W
R846	1-216-864-11	SHORT	0		
R847	1-216-864-11	SHORT	0		
R849	1-216-864-11	SHORT	0		
R850	1-216-864-11	SHORT	0		
R851	1-216-864-11	SHORT	0		
R852	1-216-864-11	SHORT	0		
R853	1-216-864-11	SHORT	0		
R854	1-216-864-11	SHORT	0		
R855	1-216-864-11	SHORT	0		
R856	1-216-864-11	SHORT	0		
R857	1-216-864-11	SHORT	0		
R858	1-216-864-11	SHORT	0		
R860	1-216-864-11	SHORT	0		
R861	1-216-833-11	METAL CHIP	10K	5%	1/16W
R862	1-216-801-11	METAL CHIP	22	5%	1/16W
R863	1-216-801-11	METAL CHIP	22	5%	1/16W
R864	1-216-809-11	METAL CHIP	100	5%	1/16W
R865	1-216-805-11	METAL CHIP	47	5%	1/16W
R866	1-216-864-11	SHORT	0		
R867	1-216-864-11	SHORT	0		
R868	1-216-864-11	SHORT	0		
R869	1-216-864-11	SHORT	0		
R870	1-216-864-11	SHORT	0		
R871	1-216-864-11	SHORT	0		
R873	1-216-864-11	SHORT	0		

Ref. No.	Part No.	Description			Remark
R874	1-216-864-11	SHORT	0		
R875	1-216-864-11	SHORT	0		
R876	1-216-864-11	SHORT	0		
R877	1-216-809-11	METAL CHIP	100	5%	1/16W
R878	1-216-864-11	SHORT	0		
R880	1-216-864-11	SHORT	0		
R882	1-216-864-11	SHORT	0		
R883	1-216-864-11	SHORT	0		
		< COMPOSITION CIRCUIT BLOCK >			
* RB102	1-233-270-11	NETWORK, RES (8 GANG) 10K			
RB103	1-233-576-11	RES, CHIP NETWORK 100			
RB104	1-233-576-11	RES, CHIP NETWORK 100			
RB105	1-233-576-11	RES, CHIP NETWORK 100			
RB106	1-233-576-11	RES, CHIP NETWORK 100			
RB107	1-233-576-11	RES, CHIP NETWORK 100			
RB108	1-233-576-11	RES, CHIP NETWORK 100			
RB109	1-233-576-11	RES, CHIP NETWORK 100			
RB110	1-233-576-11	RES, CHIP NETWORK 100			
RB111	1-233-576-11	RES, CHIP NETWORK 100			
		< VARIABLE RESISTOR >			
RV501	1-223-583-11	RES, ADJ, CARBON 1K (VIDEO LEVEL)			
		< VIBRATOR >			
X101	1-795-174-11	VIBRATOR, CERAMIC (16.5MHz)			
X102	1-781-867-21	VIBRATOR, CRYSTAL (27MHz)			

MS-81 BOARD
****
(Ref.No. 1,000 Series)

Ref. No.	Part No.	Description
		< CONNECTOR >
CN001	1-815-412-11	CONNECTOR, FFC/FPC 5P
		< SWITCH >
S001	1-786-133-11	SWITCH, ROTARY (CHUCK/TRAY DETECT)

* 1-468-620-11 POWER BLOCK (HS15S1E)
(AEP, UK, HK, KR, RUS)
****
(Ref. No. 3,000 Series)

Ref. No.	Part No.	Description		Remark
		< CAPACITOR >		
⚠C101	1-115-165-11	FILM	0.1uF	250V
⚠C102	1-115-165-11	FILM	0.1uF	250V
⚠C103	1-127-942-11	CERAMIC	330PF	250V
⚠C104	1-127-942-11	CERAMIC	330PF	250V
⚠C107	1-127-942-11	CERAMIC	330PF	250V
C110	9-885-012-88	ELECT	47uF	400V
C115	1-130-483-11	FILM	0.01uF	50V
C116	1-130-483-11	FILM	0.01uF	50V
C117	1-130-477-11	FILM	0.0033uF	50V
C150	9-885-012-89	CERAMIC	47PF	2KV
C211	1-111-083-11	ELECT	150uF	35V
C213	1-126-947-11	ELECT	47uF	35V
C221	1-111-082-11	ELECT	100uF	35V
C223	1-126-947-11	ELECT	47uF	35V
C301	1-126-961-11	ELECT	2.2uF	50V
C311	1-111-087-11	ELECT	330uF	35V
C313	1-126-947-11	ELECT	47uF	35V
C314	1-126-933-11	ELECT	100uF	16V
C413	1-126-947-11	ELECT	47uF	35V
C414	1-130-483-11	FILM	0.01uF	50V
C511	1-111-082-11	ELECT	100uF	35V
C513	1-126-947-11	ELECT	47uF	35V
C611	1-111-087-11	ELECT	330uF	35V
C613	1-126-947-11	ELECT	47uF	35V
C614	1-126-947-11	ELECT	47uF	35V
C711	1-126-947-11	ELECT	47uF	35V
		< CONNECTOR >		
⚠CN101	1-580-230-11	CONNECTOR 2P		
* CN201	1-778-318-21	CONNECTOR 13P		
		< DIODE >		
⚠D101	9-885-000-79	DIODE S1WBA60		
D102	8-719-160-78	DIODE RD24FB2		
D104	8-719-109-66	DIODE RD3.3ES-B2		
D105	9-903-904-01	DIODE 1SS270A		
D211	8-719-018-84	DIODE D2S6M		
D212	8-719-160-87	DIODE RD33FB2		
D221	8-719-032-12	DIODE D1NS6		
D311	8-719-510-02	DIODE D1NS4		
D413	8-719-510-02	DIODE D1NS4		
D511	8-719-063-69	DIODE D2L20U		
D611	8-719-018-83	DIODE D2S4M		
D621	8-719-064-11	DIODE SPR-325MVW (ON/STANDBY)		
		< FUSE >		
⚠F101	1-532-743-11	FUSE (2A/250V)		
		< FUSE CLIP >		
FC1	9-885-012-77	FUSE CLIP		
FC2	9-885-012-77	FUSE CLIP		
		< EARTH TERMINAL >		
FG101	1-537-738-21	TERMINAL, EARTH		
FG201	1-537-738-21	TERMINAL, EARTH		
		< IC >		
IC301	8-759-420-19	IC AN1431T		
IC411	8-759-420-19	IC AN1431T		
		< COIL >		
⚠L101	9-885-012-78	LINE FILTER	18mH	
⚠L102	9-885-012-78	LINE FILTER	18mH	
L150	9-885-012-79	BEAD CORE	120	
L211	9-885-012-80	COIL, CHOKE	39uH	
L221	9-885-012-81	COIL, CHOKE	100uH	
L311	9-885-012-80	COIL, CHOKE	39uH	
L511	9-885-012-81	COIL, CHOKE	100uH	
L611	9-885-012-81	COIL, CHOKE	100uH	

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POWER BLOCK (HS15S1E)

Ref. No.	Part No.	Description		Remark
		<IC LINK >		
⚠P311	9-885-015-62	LINK, IC (1A/60V)		
⚠P611	9-885-015-62	LINK, IC (1A/60V)		
		< PHOTO COUPLER >		
⚠PC101	8-749-011-50	PHOTO COUPLER PS2561		
		< TRANSISTOR >		
Q101	9-885-006-12	TRANSISTOR	2SK2700	
Q102	8-729-023-98	TRANSISTOR	2SC3377	
Q211	9-885-005-96	TRANSISTOR	2SJ525	
Q311	8-729-265-52	TRANSISTOR	2SC2655	
Q411	9-885-006-08	TRANSISTOR	2SD1768S	
Q611	8-729-265-52	TRANSISTOR	2SC2655	
Q621	8-729-901-41	TRANSISTOR	2SC1740S	
Q622	8-729-029-92	TRANSISTOR	DTC143ES	
Q712	8-729-029-92	TRANSISTOR	DTC143ES	
		< SWITCH >		
⚠SW101	9-885-012-83	SWITCH (POWER)		
		< TRANSFORMER >		
⚠T101	9-885-012-90	TRANSFORMER		

POWER BLOCK (HS15S1U)

Ref. No.	Part No.	Description		Remark
*	1-468-619-11	POWER BLOCK (HS15S1U) (US, CND, MX)		
		*********************		
		(Ref. No. 5,000 Series)		
		< CAPACITOR >		
⚠C101	1-115-165-11	FILM	0.1uF	250V
⚠C107	1-113-937-11	CERAMIC	2200PF	250V
C110	9-885-015-63	ELECT	180uF	200V
C115	1-130-489-11	FILM	0.033uF	50V
C116	1-130-483-11	FILM	0.01uF	50V
C117	1-130-477-11	FILM	0.0033uF	50V
C150	9-885-012-86	CERAMIC	470PF	1KV
C211	1-111-083-11	ELECT	150uF	35V
C213	1-126-947-11	ELECT	47uF	35V
C221	1-111-082-11	ELECT	100uF	35V
C223	1-126-947-11	ELECT	47uF	35V
C301	1-126-956-11	ELECT	2.2uF	50V
C311	1-111-087-11	ELECT	330uF	35V
C313	1-126-947-11	ELECT	47uF	35V
C314	1-126-965-11	ELECT	22uF	50V
C413	1-126-947-11	ELECT	47uF	35V
C414	1-130-483-11	FILM	0.01uF	50V
C511	1-111-082-11	ELECT	100uF	35V
C513	1-126-947-11	ELECT	47uF	35V
C611	1-111-087-11	ELECT	330uF	35V
C613	1-126-947-11	ELECT	47uF	35V
C711	1-126-947-11	ELECT	47uF	35V
		< CONNECTOR >		
⚠CN101	1-580-230-11	CONNECTOR 2P		
* CN201	1-778-318-21	CONNECTOR 13P		

Ref. No.	Part No.	Description		Remark
		< DIODE >		
⚠D101	9-885-000-79	DIODE S1WBA60		
D104	8-719-062-66	DIODE HZS2C3-TE		
D105	9-903-904-01	DIODE 1SS270A		
D211	8-719-018-83	DIODE D2S4M		
D212	8-719-160-87	DIODE RD33FB2		
D221	8-719-510-02	DIODE D1NS4		
D311	8-719-510-02	DIODE D1NS4		
D413	8-719-510-02	DIODE D1NS4		
D511	8-719-510-02	DIODE D1NS4		
D611	8-719-018-83	DIODE D2S4M		
D621	8-719-064-11	DIODE SPR-325MVW (ON/STANDBY)		
		< FUSE >		
⚠F101	1-533-296-11	FUSE (2A/125V)		
		< FUSE CLIP >		
FC1	9-885-012-77	FUSE CLIP		
FC2	9-885-012-77	FUSE CLIP		
		< EARTH TERMINAL >		
FG101	1-537-738-21	TERMINAL, EARTH		
FG201	1-537-738-21	TERMINAL, EARTH		
		< IC >		
IC301	8-759-420-19	IC AN1431T		
IC411	8-759-420-19	IC AN1431T		
		< COIL >		
⚠L101	9-885-012-78	LINE FILTER	18mH	
L150	9-885-012-79	BEAD CORE	120	
L211	9-885-012-80	COIL, CHOKE	39uH	
L221	9-885-012-81	COIL, CHOKE	100uH	
L311	9-885-012-80	COIL, CHOKE	39uH	
L511	9-885-012-81	COIL, CHOKE	100uH	
L611	9-885-012-81	COIL, CHOKE	100uH	
		<IC LINK >		
⚠P311	9-885-015-62	LINK, IC (1A/60V)		
⚠P611	9-885-015-62	LINK, IC (1A/60V)		
		< PHOTO COUPLER >		
⚠PC101	9-995-566-01	PHOTO COUPLER PS2501		
		< TRANSISTOR >		
Q101	9-885-006-10	TRANSISTOR	2SK2750	
Q102	8-729-023-98	TRANSISTOR	2SC3377	
Q211	9-885-005-96	TRANSISTOR	2SJ525	
Q311	8-729-265-52	TRANSISTOR	2SC2655	
Q411	9-885-006-08	TRANSISTOR	2SD1768S	
Q611	8-729-265-52	TRANSISTOR	2SC2655	
Q621	8-729-901-41	TRANSISTOR	2SC1740S	
Q622	8-729-029-92	TRANSISTOR	DTC143ES	
Q712	8-729-029-92	TRANSISTOR	DTC143ES	

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Ref. No.	Part No.	Description			Remark
		< SWITCH >			
⚠SW101	9-885-012-83	SWITCH (POWER)			
		< TRANSFORMER >			
⚠T101	9-885-012-87	TRANSFORMER			
*	A-6065-765-A	RY-13 BOARD, COMPLETE (US, CND, MX, HK, KR)			
*	A-6065-780-A	RY-13 BOARD, COMPLETE (AEP, UK, RUS)			
		********************** (Ref.No. 1,000 Series)			
		< CAPACITOR >			
C601	1-104-705-11	MYLAR	0.1uF	20%	250V
		< CONNECTOR >			
* CN601	1-580-230-11	PIN, CONNECTOR (PC BOARD) 2P			
* CN603	1-794-577-11	PIN, CONNECTOR (POWER)			
CN604	1-564-002-11	PIN, CONNECTOR 3P			
CN606	1-770-128-11	PIN, CONNECTOR 2P			
		< DIODE >			
D601	8-719-911-19	DIODE 1SS119-25TD			
		< LINE FILTER >			
⚠LF601	1-416-778-11	FILTER, LINE			
		< RELAY >			
⚠RY601	1-755-318-11	RELAY, POWER			
*	A-6065-768-A	VP-57 BOARD, COMPLETE (US, CND, MX, HK, KR)			
		********************** (Ref.No. 3,000 Series)			
		< CAPACITOR >			
C101	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C102	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C103	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C104	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C105	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C106	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C107	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C108	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C109	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C110	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C111	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C112	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C113	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C114	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C115	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C117	1-127-956-21	FILM CHIP	0.1uF	5%	16V
C118	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C119	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C120	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C122	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C123	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C124	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C125	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C126	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C127	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C128	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C129	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C130	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C131	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C132	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C133	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C134	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C135	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C136	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C137	1-165-872-21	ELECT CHIP	47uF	20%	6.3V
C138	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C139	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C140	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C201	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C202	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C203	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C204	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C205	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C206	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C207	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C208	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C209	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C210	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C211	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C212	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C213	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C214	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C215	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C216	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C218	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C220	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C221	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C222	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C223	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C225	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C226	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C227	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C301	1-126-204-11	ELECT CHIP	47uF	20%	16V
C302	1-126-204-11	ELECT CHIP	47uF	20%	16V
C303	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C304	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C305	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C306	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C307	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C308	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C309	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C310	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C311	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C312	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C313	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C314	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C315	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description				Remark
C316	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	
C317	1-127-956-21	FILM CHIP	0.1uF	5%	16V	
C318	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C320	1-164-315-11	CERAMIC CHIP	470PF	5%	50V	
C321	1-164-315-11	CERAMIC CHIP	470PF	5%	50V	
C322	1-165-872-21	ELECT CHIP	47uF	20%	6.3V	
C323	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C324	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C326	1-126-395-11	ELECT	22uF	20%	16V	
C327	1-126-395-11	ELECT	22uF	20%	16V	
C328	1-127-956-21	FILM CHIP	0.1uF	5%	16V	
C329	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	
C330	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C331	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	
C332	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C333	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	
C334	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C335	1-126-205-11	ELECT CHIP	47uF	20%	6.3V	
C336	1-126-205-11	ELECT CHIP	47uF	20%	6.3V	
C337	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C338	1-126-205-11	ELECT CHIP	47uF	20%	6.3V	
C339	1-126-205-11	ELECT CHIP	47uF	20%	6.3V	
C340	1-127-956-21	FILM CHIP	0.1uF	5%	16V	
C341	1-127-956-21	FILM CHIP	0.1uF	5%	16V	
C342	1-127-956-21	FILM CHIP	0.1uF	5%	16V	
C343	1-126-205-11	ELECT CHIP	47uF	20%	6.3V	
C344	1-126-205-11	ELECT CHIP	47uF	20%	6.3V	
C345	1-126-205-11	ELECT CHIP	47uF	20%	6.3V	
C346	1-126-205-11	ELECT CHIP	47uF	20%	6.3V	
C347	1-126-205-11	ELECT CHIP	47uF	20%	6.3V	
C348	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C349	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	
C350	1-127-956-21	FILM CHIP	0.1uF	5%	16V	
C351	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C352	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C353	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C354	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C358	1-162-907-11	CERAMIC CHIP	2PF	0.25PF	50V	
C360	1-162-907-11	CERAMIC CHIP	2PF	0.25PF	50V	
C361	1-162-907-11	CERAMIC CHIP	2PF	0.25PF	50V	
		< CONNECTOR >				
CN101	1-778-331-11	CONNECTOR, FFC/FPC 16P				
CN102	1-778-315-11	PIN, CONNECTOR (PC BOARD) 5P				
		< DIODE >				
D301	8-719-988-61	DIODE 1SS355TE-17				
D302	8-719-988-61	DIODE 1SS355TE-17				
D303	8-719-071-15	DIODE HZM6.8ZWA1TL				
D304	8-719-071-15	DIODE HZM6.8ZWA1TL				
D305	8-719-071-15	DIODE HZM6.8ZWA1TL				
D309	8-719-071-15	DIODE HZM6.8ZWA1TL				
D310	8-719-066-16	DIODE RB491D-T146				
D311	8-719-066-16	DIODE RB491D-T146				
		< FILTER >				
FL101	1-234-604-21	FILTER, LOW PASS (6.75MHz)				
FL102	1-234-604-21	FILTER, LOW PASS (6.75MHz)				
FL103	1-234-604-21	FILTER, LOW PASS (6.75MHz)				
FL104	1-234-604-21	FILTER, LOW PASS (6.75MHz)				
FL105	1-234-604-21	FILTER, LOW PASS (6.75MHz)				
FL106	1-234-604-21	FILTER, LOW PASS (6.75MHz)				
FL107	1-233-893-21	FILTER, CHIP EMI				
FL108	1-233-893-21	FILTER, CHIP EMI				
FL109	1-233-893-21	FILTER, CHIP EMI				
FL301	1-795-280-11	FILTER, LOW PASS (13.5MHz)				
FL302	1-795-280-11	FILTER, LOW PASS (13.5MHz)				
FL303	1-795-280-11	FILTER, LOW PASS (13.5MHz)				
		< IC >				
IC101	8-759-837-11	IC CXD9649R				
IC102	8-759-684-19	IC ADV7190KST				
IC103	8-759-599-45	IC MM1385ENLE				
IC104	8-759-460-72	IC BA033FP-E2				
IC201	8-759-837-36	IC CXD9606Q				
IC202	8-759-271-88	IC TC7SHU04FU-TE85R				
IC203	8-759-573-19	IC MT48LC1M16A1TG-7S				
IC204	8-759-271-88	IC TC7SHU04FU-TE85R				
IC301	8-759-521-90	IC PQ05DZ5U				
IC302	8-759-667-17	IC L79M05TLL-SONY-TL				
IC303	6-700-010-01	IC ADV7196AKS				
IC304	8-759-599-45	IC MM1385ENLE				
IC306	8-759-684-20	IC LA7104M-TLM				
IC307	6-701-080-01	IC TK15450LTL				
IC308	6-701-080-01	IC TK15450LTL				
		< JACK >				
J301	1-793-475-11	JACK, PIN 2P (VIDEO OUT)				
J302	1-694-484-11	TERMINAL, S (2P.V) (S VIDEO OUT)				
J303	1-784-675-11	JACK, PIN 3P (COMPONENT VIDEO OUT)				
		< COIL >				
L102	1-412-064-11	INDUCTOR	100uH			
L103	1-412-064-11	INDUCTOR	100uH			
L301	1-412-064-11	INDUCTOR	100uH			
L302	1-412-064-11	INDUCTOR	100uH			
L303	1-412-064-11	INDUCTOR	100uH			
L304	1-412-060-11	INDUCTOR	22uH			
L305	1-412-060-11	INDUCTOR	22uH			
L306	1-412-064-11	INDUCTOR	100uH			
		< TRANSISTOR >				
Q101	8-729-230-49	TRANSISTOR	2SC2712-YG-TE85L			
Q102	8-729-230-49	TRANSISTOR	2SC2712-YG-TE85L			
Q103	8-729-230-49	TRANSISTOR	2SC2712-YG-TE85L			
Q104	8-729-230-49	TRANSISTOR	2SC2712-YG-TE85L			
Q105	8-729-230-49	TRANSISTOR	2SC2712-YG-TE85L			
Q106	8-729-230-49	TRANSISTOR	2SC2712-YG-TE85L			
Q107	8-729-216-22	TRANSISTOR	2SA1162-YG-TE85L			
Q108	8-729-216-22	TRANSISTOR	2SA1162-YG-TE85L			
Q109	8-729-216-22	TRANSISTOR	2SA1162-YG-TE85L			
Q110	8-729-216-22	TRANSISTOR	2SA1162-YG-TE85L			
Q111	8-729-216-22	TRANSISTOR	2SA1162-YG-TE85L			
Q112	8-729-216-22	TRANSISTOR	2SA1162-YG-TE85L			
Q113	8-729-230-49	TRANSISTOR	2SC2712-YG-TE85L			
Q114	8-729-230-49	TRANSISTOR	2SC2712-YG-TE85L			
Q115	8-729-230-49	TRANSISTOR	2SC2712-YG-TE85L			
Q116	8-729-424-08	TRANSISTOR	UN2111-TX			
Q117	8-729-421-19	TRANSISTOR	UN2213-TX			
Q301	8-729-230-49	TRANSISTOR	2SC2712-YG-TE85L			

Ref. No.	Part No.	Description				Remark
Q302	8-729-230-49	TRANSISTOR	2SC2712-YG-TE85L			
Q303	8-729-230-49	TRANSISTOR	2SC2712-YG-TE85L			
Q304	8-729-216-22	TRANSISTOR	2SA1162-YG-TE85L			
Q305	8-729-216-22	TRANSISTOR	2SA1162-YG-TE85L			
Q306	8-729-216-22	TRANSISTOR	2SA1162-YG-TE85L			
Q307	8-729-421-19	TRANSISTOR	UN2213-TX			
Q308	8-729-421-19	TRANSISTOR	UN2213-TX			
Q309	8-729-424-08	TRANSISTOR	UN2111-TX			
Q310	8-729-424-08	TRANSISTOR	UN2111-TX			
Q311	8-729-424-08	TRANSISTOR	UN2111-TX			
Q312	8-729-424-08	TRANSISTOR	UN2111-TX			
Q313	8-729-424-08	TRANSISTOR	UN2111-TX			
Q314	8-729-422-27	TRANSISTOR	2SD601A-QRS-TX			
Q317	8-729-424-08	TRANSISTOR	UN2111-TX			
Q318	8-729-046-97	TRANSISTOR	2SD1938 (F)-T (TX).SO			
Q319	8-729-046-97	TRANSISTOR	2SD1938 (F)-T (TX).SO			
Q320	8-729-046-97	TRANSISTOR	2SD1938 (F)-T (TX).SO			
		< RESISTOR >				
R101	1-216-797-11	METAL CHIP	10	5%	1/16W	
R102	1-216-809-11	METAL CHIP	100	5%	1/16W	
R103	1-216-809-11	METAL CHIP	100	5%	1/16W	
R104	1-216-809-11	METAL CHIP	100	5%	1/16W	
R105	1-216-797-11	METAL CHIP	10	5%	1/16W	
R106	1-216-797-11	METAL CHIP	10	5%	1/16W	
R107	1-216-864-11	SHORT	0			
R108	1-216-797-11	METAL CHIP	10	5%	1/16W	
R109	1-216-797-11	METAL CHIP	10	5%	1/16W	
R110	1-216-797-11	METAL CHIP	10	5%	1/16W	
R111	1-216-797-11	METAL CHIP	10	5%	1/16W	
R112	1-216-809-11	METAL CHIP	100	5%	1/16W	
R113	1-216-797-11	METAL CHIP	10	5%	1/16W	
R114	1-216-797-11	METAL CHIP	10	5%	1/16W	
R115	1-216-797-11	METAL CHIP	10	5%	1/16W	
R116	1-216-797-11	METAL CHIP	10	5%	1/16W	
R117	1-216-797-11	METAL CHIP	10	5%	1/16W	
R118	1-216-809-11	METAL CHIP	100	5%	1/16W	
R119	1-216-797-11	METAL CHIP	10	5%	1/16W	
R120	1-216-809-11	METAL CHIP	100	5%	1/16W	
R121	1-216-797-11	METAL CHIP	10	5%	1/16W	
R122	1-216-797-11	METAL CHIP	10	5%	1/16W	
R123	1-216-797-11	METAL CHIP	10	5%	1/16W	
R124	1-216-797-11	METAL CHIP	10	5%	1/16W	
R125	1-216-797-11	METAL CHIP	10	5%	1/16W	
R126	1-216-797-11	METAL CHIP	10	5%	1/16W	
R127	1-216-864-11	SHORT	0			
R128	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R129	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R130	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R131	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R132	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R133	1-216-809-11	METAL CHIP	100	5%	1/16W	
R134	1-216-809-11	METAL CHIP	100	5%	1/16W	
R135	1-216-805-11	METAL CHIP	47	5%	1/16W	
R136	1-218-835-11	METAL CHIP	330	0.5%	1/10W	
R137	1-218-835-11	METAL CHIP	330	0.5%	1/10W	
R138	1-218-835-11	METAL CHIP	330	0.5%	1/10W	
R139	1-218-835-11	METAL CHIP	330	0.5%	1/10W	
R140	1-218-835-11	METAL CHIP	330	0.5%	1/10W	
R141	1-218-835-11	METAL CHIP	330	0.5%	1/10W	

Ref. No.	Part No.	Description				Remark
R142	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R143	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R144	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R146	1-216-801-11	METAL CHIP	22	5%	1/16W	
R147	1-216-801-11	METAL CHIP	22	5%	1/16W	
R148	1-216-801-11	METAL CHIP	22	5%	1/16W	
R149	1-216-801-11	METAL CHIP	22	5%	1/16W	
R150	1-216-801-11	METAL CHIP	22	5%	1/16W	
R151	1-216-801-11	METAL CHIP	22	5%	1/16W	
R152	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R153	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R154	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R155	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R156	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R157	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R158	1-211-983-11	METAL CHIP	39	0.5%	1/10W	
R159	1-211-983-11	METAL CHIP	39	0.5%	1/10W	
R160	1-211-983-11	METAL CHIP	39	0.5%	1/10W	
R161	1-211-983-11	METAL CHIP	39	0.5%	1/10W	
R162	1-211-983-11	METAL CHIP	39	0.5%	1/10W	
R163	1-211-983-11	METAL CHIP	39	0.5%	1/10W	
R164	1-218-829-11	METAL CHIP	180	0.5%	1/10W	
R165	1-218-829-11	METAL CHIP	180	0.5%	1/10W	
R166	1-218-829-11	METAL CHIP	180	0.5%	1/10W	
R167	1-218-829-11	METAL CHIP	180	0.5%	1/10W	
R168	1-218-829-11	METAL CHIP	180	0.5%	1/10W	
R169	1-218-829-11	METAL CHIP	180	0.5%	1/10W	
R170	1-218-855-11	METAL CHIP	2.2K	0.5%	1/10W	
R171	1-218-855-11	METAL CHIP	2.2K	0.5%	1/10W	
R172	1-218-855-11	METAL CHIP	2.2K	0.5%	1/10W	
R173	1-218-855-11	METAL CHIP	2.2K	0.5%	1/10W	
R174	1-218-855-11	METAL CHIP	2.2K	0.5%	1/10W	
R175	1-218-855-11	METAL CHIP	2.2K	0.5%	1/10W	
R176	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R177	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R178	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R179	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R180	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R181	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R182	1-216-801-11	METAL CHIP	22	5%	1/16W	
R183	1-216-864-11	SHORT	0			
R184	1-216-801-11	METAL CHIP	22	5%	1/16W	
R185	1-216-864-11	SHORT	0			
R186	1-216-801-11	METAL CHIP	22	5%	1/16W	
R187	1-216-864-11	SHORT	0			
R188	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R189	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R190	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R191	1-216-864-11	SHORT	0			
R192	1-216-864-11	SHORT	0			
R201	1-216-797-11	METAL CHIP	10	5%	1/16W	
R202	1-216-809-11	METAL CHIP	100	5%	1/16W	
R203	1-216-809-11	METAL CHIP	100	5%	1/16W	
R204	1-216-797-11	METAL CHIP	10	5%	1/16W	
R205	1-216-797-11	METAL CHIP	10	5%	1/16W	
R206	1-216-801-11	METAL CHIP	22	5%	1/16W	
R207	1-216-797-11	METAL CHIP	10	5%	1/16W	
R208	1-216-797-11	METAL CHIP	10	5%	1/16W	
R209	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R210	1-216-833-11	METAL CHIP	10K	5%	1/16W	

Ref. No.	Part No.	Description			Remark
R211	1-216-845-11	METAL CHIP	100K	5%	1/16W
R212	1-216-845-11	METAL CHIP	100K	5%	1/16W
R213	1-216-845-11	METAL CHIP	100K	5%	1/16W
R214	1-216-845-11	METAL CHIP	100K	5%	1/16W
R215	1-216-845-11	METAL CHIP	100K	5%	1/16W
R216	1-216-845-11	METAL CHIP	100K	5%	1/16W
R217	1-216-845-11	METAL CHIP	100K	5%	1/16W
R218	1-216-845-11	METAL CHIP	100K	5%	1/16W
R220	1-216-864-11	SHORT	0		
R221	1-216-833-11	METAL CHIP	10K	5%	1/16W
R222	1-216-797-11	METAL CHIP	10	5%	1/16W
R223	1-216-797-11	METAL CHIP	10	5%	1/16W
R224	1-216-797-11	METAL CHIP	10	5%	1/16W
R225	1-216-797-11	METAL CHIP	10	5%	1/16W
R226	1-216-797-11	METAL CHIP	10	5%	1/16W
R227	1-216-797-11	METAL CHIP	10	5%	1/16W
R228	1-216-797-11	METAL CHIP	10	5%	1/16W
R229	1-216-797-11	METAL CHIP	10	5%	1/16W
R230	1-216-797-11	METAL CHIP	10	5%	1/16W
R231	1-216-797-11	METAL CHIP	10	5%	1/16W
R232	1-216-833-11	METAL CHIP	10K	5%	1/16W
R233	1-216-797-11	METAL CHIP	10	5%	1/16W
R234	1-216-797-11	METAL CHIP	10	5%	1/16W
R235	1-216-797-11	METAL CHIP	10	5%	1/16W
R236	1-216-797-11	METAL CHIP	10	5%	1/16W
R237	1-216-797-11	METAL CHIP	10	5%	1/16W
R238	1-216-797-11	METAL CHIP	10	5%	1/16W
R239	1-216-797-11	METAL CHIP	10	5%	1/16W
R240	1-216-833-11	METAL CHIP	10K	5%	1/16W
R241	1-216-797-11	METAL CHIP	10	5%	1/16W
R242	1-216-833-11	METAL CHIP	10K	5%	1/16W
R243	1-216-833-11	METAL CHIP	10K	5%	1/16W
R244	1-216-797-11	METAL CHIP	10	5%	1/16W
R245	1-216-797-11	METAL CHIP	10	5%	1/16W
R246	1-216-833-11	METAL CHIP	10K	5%	1/16W
R247	1-216-797-11	METAL CHIP	10	5%	1/16W
R248	1-216-797-11	METAL CHIP	10	5%	1/16W
R249	1-216-833-11	METAL CHIP	10K	5%	1/16W
R250	1-216-833-11	METAL CHIP	10K	5%	1/16W
R251	1-216-833-11	METAL CHIP	10K	5%	1/16W
R252	1-216-864-11	SHORT	0		
R253	1-216-801-11	METAL CHIP	22	5%	1/16W
R254	1-216-801-11	METAL CHIP	22	5%	1/16W
R255	1-216-801-11	METAL CHIP	22	5%	1/16W
R256	1-216-801-11	METAL CHIP	22	5%	1/16W
R257	1-216-801-11	METAL CHIP	22	5%	1/16W
R258	1-216-801-11	METAL CHIP	22	5%	1/16W
R259	1-216-801-11	METAL CHIP	22	5%	1/16W
R260	1-216-801-11	METAL CHIP	22	5%	1/16W
R261	1-216-801-11	METAL CHIP	22	5%	1/16W
R262	1-216-801-11	METAL CHIP	22	5%	1/16W
R263	1-216-801-11	METAL CHIP	22	5%	1/16W
R264	1-216-801-11	METAL CHIP	22	5%	1/16W
R265	1-216-801-11	METAL CHIP	22	5%	1/16W
R266	1-216-801-11	METAL CHIP	22	5%	1/16W
R267	1-216-801-11	METAL CHIP	22	5%	1/16W
R268	1-216-801-11	METAL CHIP	22	5%	1/16W
R269	1-216-789-11	METAL CHIP	2.2	5%	1/16W
R270	1-216-789-11	METAL CHIP	2.2	5%	1/16W
R271	1-216-789-11	METAL CHIP	2.2	5%	1/16W
R272	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R273	1-216-864-11	SHORT	0		
R274	1-216-864-11	SHORT	0		
R275	1-216-801-11	METAL CHIP	22	5%	1/16W
R276	1-216-801-11	METAL CHIP	22	5%	1/16W
R301	1-216-797-11	METAL CHIP	10	5%	1/16W
R302	1-216-797-11	METAL CHIP	10	5%	1/16W
R303	1-216-797-11	METAL CHIP	10	5%	1/16W
R304	1-216-797-11	METAL CHIP	10	5%	1/16W
R305	1-216-797-11	METAL CHIP	10	5%	1/16W
R306	1-216-797-11	METAL CHIP	10	5%	1/16W
R307	1-216-797-11	METAL CHIP	10	5%	1/16W
R308	1-216-797-11	METAL CHIP	10	5%	1/16W
R309	1-216-864-11	SHORT	0		
R311	1-216-789-11	METAL CHIP	2.2	5%	1/16W
R313	1-216-864-11	SHORT	0		
R315	1-216-864-11	SHORT	0		
R316	1-216-797-11	METAL CHIP	10	5%	1/16W
R317	1-216-797-11	METAL CHIP	10	5%	1/16W
R318	1-216-797-11	METAL CHIP	10	5%	1/16W
R319	1-216-797-11	METAL CHIP	10	5%	1/16W
R320	1-216-797-11	METAL CHIP	10	5%	1/16W
R321	1-216-797-11	METAL CHIP	10	5%	1/16W
R322	1-216-797-11	METAL CHIP	10	5%	1/16W
R323	1-216-797-11	METAL CHIP	10	5%	1/16W
R324	1-216-797-11	METAL CHIP	10	5%	1/16W
R325	1-216-797-11	METAL CHIP	10	5%	1/16W
R326	1-216-797-11	METAL CHIP	10	5%	1/16W
R327	1-216-797-11	METAL CHIP	10	5%	1/16W
R328	1-216-797-11	METAL CHIP	10	5%	1/16W
R329	1-216-797-11	METAL CHIP	10	5%	1/16W
R330	1-216-797-11	METAL CHIP	10	5%	1/16W
R331	1-216-797-11	METAL CHIP	10	5%	1/16W
R333	1-216-809-11	METAL CHIP	100	5%	1/16W
R337	1-216-864-11	SHORT	0		
R338	1-216-809-11	METAL CHIP	100	5%	1/16W
R339	1-216-809-11	METAL CHIP	100	5%	1/16W
R340	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R341	1-216-864-11	SHORT	0		
R342	1-216-864-11	SHORT	0		
R343	1-216-864-11	SHORT	0		
R348	1-218-835-11	METAL CHIP	330	0.5%	1/10W
R349	1-218-835-11	METAL CHIP	330	0.5%	1/10W
R350	1-218-835-11	METAL CHIP	330	0.5%	1/10W
R351	1-216-801-11	METAL CHIP	22	5%	1/16W
R352	1-216-801-11	METAL CHIP	22	5%	1/16W
R353	1-216-801-11	METAL CHIP	22	5%	1/16W
R354	1-216-819-11	METAL CHIP	680	5%	1/16W
R355	1-216-819-11	METAL CHIP	680	5%	1/16W
R356	1-216-819-11	METAL CHIP	680	5%	1/16W
R357	1-211-978-11	METAL CHIP	24	0.5%	1/10W
R358	1-211-978-11	METAL CHIP	24	0.5%	1/10W
R359	1-211-978-11	METAL CHIP	24	0.5%	1/10W
R360	1-218-825-11	METAL CHIP	120	0.5%	1/10W
R361	1-218-825-11	METAL CHIP	120	0.5%	1/10W
R362	1-218-825-11	METAL CHIP	120	0.5%	1/10W
R363	1-218-855-11	METAL CHIP	2.2K	0.5%	1/10W
R364	1-218-855-11	METAL CHIP	2.2K	0.5%	1/10W
R365	1-218-855-11	METAL CHIP	2.2K	0.5%	1/10W
R366	1-216-821-11	METAL CHIP	1K	5%	1/16W

Ref. No.	Part No.	Description			Remark
R367	1-216-821-11	METAL CHIP	1K	5%	1/16W
R368	1-216-821-11	METAL CHIP	1K	5%	1/16W
R370	1-216-841-11	METAL CHIP	47K	5%	1/16W
R372	1-216-841-11	METAL CHIP	47K	5%	1/16W
R374	1-216-841-11	METAL CHIP	47K	5%	1/16W
R375	1-216-833-11	METAL CHIP	10K	5%	1/16W
R376	1-216-833-11	METAL CHIP	10K	5%	1/16W
R377	1-216-821-11	METAL CHIP	1K	5%	1/16W
R378	1-216-821-11	METAL CHIP	1K	5%	1/16W
R379	1-216-833-11	METAL CHIP	10K	5%	1/16W
R380	1-216-833-11	METAL CHIP	10K	5%	1/16W
R381	1-216-833-11	METAL CHIP	10K	5%	1/16W
R382	1-216-833-11	METAL CHIP	10K	5%	1/16W
R383	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R384	1-216-837-11	METAL CHIP	22K	5%	1/16W
R389	1-216-821-11	METAL CHIP	1K	5%	1/16W
R390	1-216-841-11	METAL CHIP	47K	5%	1/16W
R391	1-216-833-11	METAL CHIP	10K	5%	1/16W
R392	1-216-833-11	METAL CHIP	10K	5%	1/16W
R393	1-216-833-11	METAL CHIP	10K	5%	1/16W
R394	1-216-821-11	METAL CHIP	1K	5%	1/16W
R395	1-216-821-11	METAL CHIP	1K	5%	1/16W
R396	1-216-821-11	METAL CHIP	1K	5%	1/16W
R397	1-216-797-11	METAL CHIP	10	5%	1/16W
R398	1-216-797-11	METAL CHIP	10	5%	1/16W
R399	1-216-797-11	METAL CHIP	10	5%	1/16W
R508	1-216-864-11	SHORT	0		
R509	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R603	1-216-833-11	METAL CHIP	10K	5%	1/16W
R604	1-216-833-11	METAL CHIP	10K	5%	1/16W
R607	1-216-864-11	SHORT	0		
R608	1-216-864-11	SHORT	0		
R610	1-216-797-11	METAL CHIP	10	5%	1/16W
R612	1-216-797-11	METAL CHIP	10	5%	1/16W
R613	1-216-797-11	METAL CHIP	10	5%	1/16W
R616	1-218-855-11	METAL CHIP	2.2K	0.5%	1/10W
R618	1-218-855-11	METAL CHIP	2.2K	0.5%	1/10W
R619	1-218-855-11	METAL CHIP	2.2K	0.5%	1/10W
R622	1-216-864-11	SHORT	0		
R623	1-218-855-11	METAL CHIP	2.2K	0.5%	1/10W
R625	1-218-855-11	METAL CHIP	2.2K	0.5%	1/10W
R626	1-218-855-11	METAL CHIP	2.2K	0.5%	1/10W
R629	1-216-864-11	SHORT	0		
R630	1-216-864-11	SHORT	0		
R647	1-216-821-11	METAL CHIP	1K	5%	1/16W
R648	1-216-864-11	SHORT	0		
R649	1-216-864-11	SHORT	0		
R650	1-469-792-11	FERRITE	0uH		
R651	1-469-792-11	FERRITE	0uH		
R652	1-469-792-11	FERRITE	0uH		
R653	1-469-792-11	FERRITE	0uH		
R654	1-216-864-11	SHORT	0		
R655	1-216-864-11	SHORT	0		
R656	1-216-864-11	SHORT	0		
R657	1-216-821-11	METAL CHIP	1K	5%	1/16W
R662	1-216-821-11	METAL CHIP	1K	5%	1/16W
R663	1-216-864-11	SHORT	0		

Ref. No.	Part No.	Description	Remark
		< VARIABLE RESISTOR >	
RV101	1-223-582-11	RES, ADJ, CARBON 470 (N LEVEL)	
RV102	1-223-582-11	RES, ADJ, CARBON 470 (S LEVEL)	
RV301	1-223-582-11	RES, ADJ, CARBON 470 (PROG LEVEL)	
		< RELAY >	
RY301	1-755-184-11	RELAY	
RY302	1-755-184-11	RELAY	
		< SWITCH >	
S301	1-692-989-11	SWITCH, SLIDE (SCAN SELECT)	
		< VIBRATOR >	
X201	1-795-251-21	VIBRATOR, CERAMIC (66MHz)	

Ref. No.	Part No.	Description	Remark
		MISCELLANEOUS	
		**************	
5	1-823-265-11	CABLE, FLEXIBLE FLAT (FLI-001)	(US, CND, MX, HK, KR)
5	1-823-265-21	CABLE, FLEXIBLE FLAT (FLI-002)	(AEP, UK, RUS)
7	1-823-266-11	CABLE, FLEXIBLE FLAT (FLR-002)	(US, CND, MX, HK, KR)
7	1-823-266-21	CABLE, FLEXIBLE FLAT (FLR-003)	(AEP, UK, RUS)
13	1-757-697-11	CABLE, FLEXIBLE FLAT (FMM-035)	
14	1-757-694-11	CABLE, FLEXIBLE FLAT (FMO-002)	
15	1-757-693-11	CABLE, FLEXIBLE FLAT (FMO-001)	
24	1-476-273-11	ENCODER, ROTARY	
⚠59	1-437-496-11	TRANSFORMER, POWER (US, CND, MX)	
⚠59	1-437-497-11	TRANSFORMER, POWER	(AEP, UK, RUS, HK, KR)
60	1-823-267-11	CABLE, FLEXIBLE FLAT (FIM-001)	(US, CND, MX, HK, KR)
60	1-823-267-21	CABLE, FLEXIBLE FLAT (FIM-002)	(AEP, UK, RUS)
61	1-823-270-11	CABLE, FLEXIBLE FLAT (FMA-003)	(US, CND, MX, HK, KR)
61	1-823-270-21	CABLE, FLEXIBLE FLAT (FMA-004)	(AEP, UK, RUS)
62	1-823-271-11	CABLE, FLEXIBLE FLAT (FMV-001)	(US, CND, MX, HK, KR)
62	1-823-272-21	CABLE, FLEXIBLE FLAT (FME-002)	(AEP, UK, RUS)
⚠65	1-769-744-91	CORD, POWER (UK, HK)	
⚠65	1-757-140-11	CORD, POWER (AEP, RUS)	
⚠65	1-783-531-31	CORD, POWER (US, CND, MX)	
⚠65	1-823-296-11	CORD, POWER (KR)	
68	1-500-386-11	FILTER, CLAMP (FERRITE CORE)	(US, CND, MX)
⚠104	8-820-144-06	OPTICAL PICK-UP KHM-240AAA/J1RP	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
		ACCESSORIES & PACKING MATERIALS ********************************	
	1-476-926-11	REMOTE COMMANDER (RMT-D140A) (US, CND, MX, KR)	
	1-476-926-31	REMOTE COMMANDER (RMT-D140P) (BLACK: AEP, UK)	
	1-476-926-41	REMOTE COMMANDER (RMT-D140E) (HK)	
	1-476-926-51	REMOTE COMMANDER (RMT-D139P) (SILVER: AEP, UK, RUS)	
	1-575-334-41	CORD, CONNECTION	
	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P (UK, HK)	
	1-776-078-31	CORD, CONNECTION (US, CND, MX, HK, KR)	
	3-070-852-11	MANUAL, INSTRUCTION (FRENCH) (AEP)	
	3-070-852-21	MANUAL, INSTRUCTION (GERMAN) (AEP)	
	3-070-852-31	MANUAL, INSTRUCTION (ITALIAN) (AEP)	
	3-070-852-41	MANUAL, INSTRUCTION (DUTCH) (AEP)	
	3-070-852-51	MANUAL, INSTRUCTION (SPANISH) (AEP)	
	3-070-852-61	MANUAL, INSTRUCTION (PORTUGUESE) (AEP)	
	3-070-852-71	MANUAL, INSTRUCTION (DANISH) (AEP)	
	3-070-852-81	MANUAL, INSTRUCTION (FINNISH) (AEP)	
	3-070-852-91	MANUAL, INSTRUCTION (SWEDISH) (AEP)	
	3-070-853-11	MANUAL, INSTRUCTION (ENGLISH) (US, CND)	
	3-070-853-21	MANUAL, INSTRUCTION (FRENCH) (US, CND)	
	3-070-853-31	MANUAL, INSTRUCTION (ENGLISH) (UK, RUS)	
	3-070-853-41	MANUAL, INSTRUCTION (RUSSIAN) (RUS)	
	3-070-853-51	MANUAL, INSTRUCTION (ENGLISH) (HK, KR)	
	3-070-853-61	MANUAL, INSTRUCTION (TRADITIONAL CHINESE) (HK)	
	3-070-853-71	MANUAL, INSTRUCTION (KOREAN) (KR)	
	3-070-853-81	MANUAL, INSTRUCTION (SWEDISH) (MX)	
	3-071-119-01	COVER, BATTERY (for RMT-D139P/D140A/D140E/D140P)	

9-929-712-11

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